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A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation.

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INSANITARY CONDITIONS OF RAILWAY STATIONS.

THE traveling public has often been heard to complain of the deplorable conditions which prevail in the sanitary equipment of many railway stations, particularly in the smaller cities and towns throughout the country.

It would appear that some railroads are very efficient in the art of studiously sidestepping the matter of expending any money for the improvement of sanitary facilities in their depots.

It might be argued that the railway companies are hard pressed for money at the present time, but we are inclined to doubt that the inadequate sanitary equipment referred to, and which has existed for years, has been brought about by the present unsatisfactory status of the railway business. These insanitary conditions were existing at a time when the railroads were spending millions for gilded terminals.

This has proved a disadvantage to both sexes of the traveling public. There is really no good and sufficient cause why this state of affairs should continue to exist unremedied year after year.

The railroad companies are undoubtedly many moons away from that unhappy and forlorn condition known as "financial embarrassment," and while their coffers at the present moment, may not be blessed with as vast and overflowing a bounty as anticipated, yet nevertheless, some few points could easily be strained to relieve or improve the sanitary conditions in outlying stations throughout the country.

Master plumbers and fitters at recent state conventions of the profession, have taken occasion to discuss the need of better toilet facilities in small town railway depots.

At the annual convention of the Illinois Master Plumbers' Association, at Springfield, a few weeks ago, specific attention was called to the salutary effects which were brought about by the passage of the Work House Bill which made it incumbent upon all round houses and machine shops in railway yards in the state, to install or remodel the sanitary equipments for employees.

It was proposed by a number of the delegates present at the convention, that this Work House Bill should be amended so as to cover railway stations. Here is a good suggestion for master plumbers when in convention assembled:

At coming state conventions of the craft, it might be well to consider the idea of passing resolutions, condemning the present insanitary aspect of so many country railway stations. A copy of these resolutions could then be forwarded to the different railroad companies.

By such action it is not unlikely that some impression will be made upon the minds of the officials of these roads and it is also possible that definite steps will be taken to remedy conditions.

Another method of bringing the matter forcibly to the attention of the railway companies, would be to secure the co-operation of local women's clubs and business men's improvement organizations. Master plumbers through their local associations could readily enough put the matter squarely before such organizations and request that they also pass resolutions urging the need of relief from the evils of insanitation in the railway stations of the community.

In European countries, the railway stations in

small cities and towns are said to be far superior to our own in sanitary features. William Haas, of Dayton, O., who was elected president of the Ohio State Association last week, relates that in Switzerland, which country he visited some months ago, the railway stations are equipped not only with the ordinary sanitary features, but also with bathrooms. Thus the tired and dust-laden traveler who must wait another hour or two for the next train, can, for about five cents, enjoy an invigorating bath between trains. Here is more food for thought which master plumbers might well assimilate while in attendance at conventions. But the imperative thing which needs united action is the sanitary improvement of the average small city railway station.

THE PLUMBER OF YESTERDAY AND TODAY

By the Honorable Frank B. Willis, Governor of Ohio.

Hon. Frank B. Willis, Governor of Ohio.

THE evolution of practical sanitation in the United States has been a proposition of steady and progressive growth. During the Colonial epoch the science of plumbing or house sanitation was in its infancy. Drainage, sewage disposal, filtration plants, and all the numerous sanitary devices of the modern home were matters and things of unknown quantity. The most exclusive mansions of that period, whether in New York or bordering on the Hudson, were sadly defective in plumbing facilities, judged from our modern point of view.

The idea that plumbing was a science and inter-related with the field of preventive medicine, hardly occurred to the minds of our Colonial forefathers. State and local sanitary codes providing for plumbing inspection were entirely unknown, and every plumber was a law unto himself. He could install as he pleased, and no one interfered. Chaos in the realm of sanitary engineering (if it could be called so at the time) reigned supreme.

But since the early days of the republic, monumental, nay, vast strides have been made in the art of plumbing installation, and in the manufacture of sanitary devices. In the phenomenal progress which has been accomplished in this regard during the last century, the plumbing craft merits numerous congratulations, for it is its representatives who have been the dynamic force, the moving spirits in this progressive and forward movement to conserve and preserve the health of communities.

It is not so many years ago that the wooden bathtub with its germ-breeding tendencies, held sway throughout the country. But with the advent of the porcelain bath and the introduction of the shower, what a radical change is brought about in the promotion of hygiene.

The master plumbers of today in Ohio and throughout the country are spreading the gospel of practical sanitary engineering, and convincing folks, especially in the rural districts that an ounce of prevention is worth a ton of cure. Sanitary plumbing makes for cleanliness and health. The doctor of medicine cures, but the doctor of plumbing prevents.

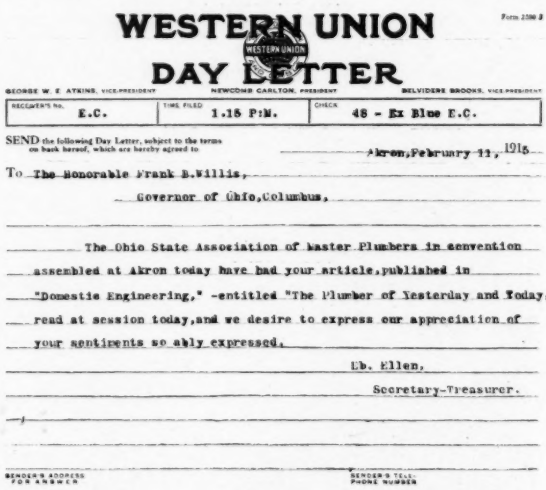
Bad plumbing develops insanitary conditions, and insanitary conditions in the home, frequently breed typhoid and other kindred diseases.

Today, in spite of the advancement of sanitary science, we still have the evils of insanitation to meet and combat. The tenements of large cities where poverty and hardship stalks about, require at the present time, the sanitary blessing that proper plumbing installation will accomplish. Undoubtedly, the progressive plumbers of the nation are fighting the insanitary tenement evils and sooner or later the desired change will be wrought with the co-operation of local authorities.

Intelligent Americans can but pause and salute that ingenious army of health soldiers—the Master Plumbers of the United States. They have surely proven themselves a potent and constructive force in the sanitary improvement of our cities and towns.

MESSAGE OF OHIO ASSOCIATION TO GOVERNOR WILLIS.

During the convention of the Ohio State Association of Master Plumbers, which was held at Akron, O., on February 9, 10 and 11, the convention instructed Eb Ellen, secretary-treasurer of the organization, to wire Governor



WESTERN UNION

DAY LETTER

GEORGE W. E. ATKINS, VICE-PRESIDENT NEWCOMB CARLTON, PRESIDENT BELVIDERE BROOKS, VICE-PRESIDENT

RECEIVER'S No.	TIME FILED	CHECK
E.C.	1.15 P.M.	48 - Ex Blue E.C.

SEND the following Day Letter, subject to the terms on back hereof, which are hereby agreed to

Akron, February 11, 1915

To The Honorable Frank B.Willis,
Governor of Ohio, Columbus,

The Ohio State Association of Master Plumbers in convention assembled at Akron today have had your article, published in "Domestic Engineering," -entitled "The Plumber of Yesterday and Today," read at session today, and we desire to express our appreciation of your sentiments so ably expressed.

Eb. Ellen,
Secretary-Treasurer.

SENDER'S ADDRESS FOR ANSWER

SENDER'S TELEPHONE NUMBER

Frank B. Willis, the association's appreciation of his sentiments concerning the plumber and the craft in general, as expressed in an article in "Domestic Engineering," which appears on this page, and of which advance proofs were distributed at the convention hall.

A War Victim.

"Do you really mean to tell me that you are a European war sufferer?"

"Yes, lady; folks has been sendin' so much grub an' t'ings across de water dey've had ter neglect us deservin' cases at home."—Boston Evening Transcript.

Too Old to Learn.

"Sweet are the uses of adversity," quoted the confirmed quoter.

"I believe it," retorted the dissatisfied one, "but somehow or other I don't seem to be able to cultivate a taste for it."—Philadelphia Public Ledger.

The Shower Baths in the Schools

Their Construction, Installation, Water Supply, Heating the Water, Various Types of Installations in Different Parts of the Country

By JOSEPH GRAHAM

WHILE the subject of bathing in public schools is not new, as we have records of swimming baths attached to the Greek Gymnasia, the introduction of the spray or shower bath in schools is a modern innovation. This first occurred in 1885, when a number of these baths were introduced in the German schools at Goettingen.

One of the most important features to be considered in designing a piping system for a series of showers is the pressure and volume of water required. Pipe sizes should be large enough to supply the shower valves with a sufficient amount of water, without causing any change in pressure. The area of the main supply should be equal to the area of the branches taken off, and the entire system should be arranged in such a manner that the hot and cold water supplies should have a uniform pressure.

The essential point in the construction of an anti-scalding valve consists in properly proportioning the hot and cold water inlets, in order to protect the user of the fixture from scalding.

A device of this kind is so designed that when first opened cold water is supplied, which is gradually reduced in volume as the port of the valve opens. By this arrangement a larger quantity of hot water is allowed to enter the port up to a predetermined maximum, at which point the valve closes against hot water. It will be seen that by such an arrangement the port of the hot water valve is never wide open.

In order to obtain positive results from a device of this character it is necessary, as before stated, that both uniform

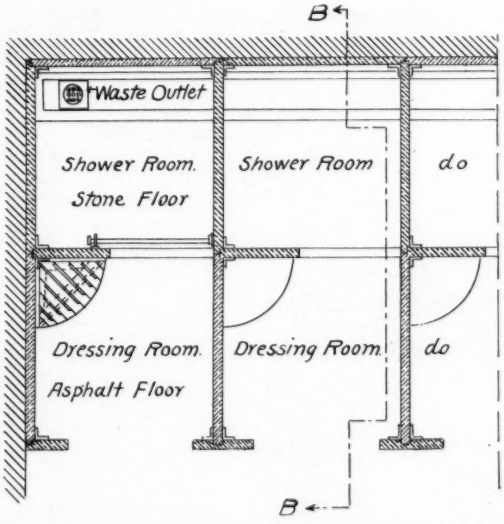


Fig. 1.—Plan of Standard Shower-Bath Enclosures in New York City Public Schools.

pressure and relative temperature of both the hot and cold water supplies be maintained.

Where exceptionally hot water may be desired, the use of a special hot water heater with automatic control has been provided. The regulating device or temperature control is set at the heater and is so arranged that the temperature of the hot water will not exceed 140 to 150 deg. Danger of scalding is thus eliminated.

The best location for showers is on the side of the shower stall. By locating them in this position, the bather is given

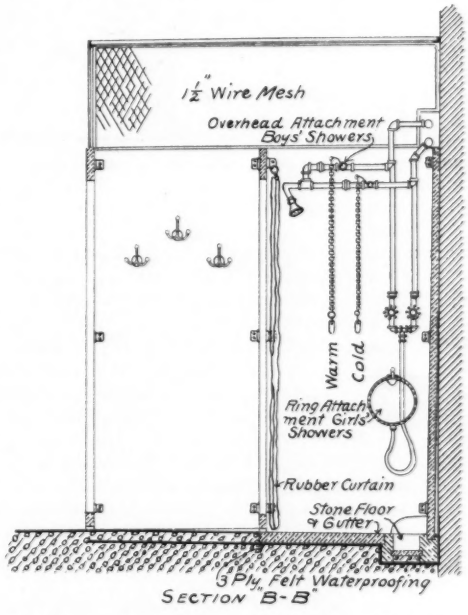


Fig. 2.—Bath Enclosure, Ends Against Wall, in New York City Public School.

the opportunity to set the shower in operation and do all adjusting before bathing.

Showers with ½-inch mixing valves are usually equipped with 5-inch rain heads or 9-inch tubular heads, although larger heads may be used, if the pressure and volume of water are sufficient. The full ¾-inch valves make a satisfactory control fixture for needle baths. The supply pipes for a needle shower should be 1 inch and the water pressure, at least, 20 pounds.

There are a large number of cities in the United States whose schools are provided with shower bath equipment. A consideration of this question has led to the following interesting information.

New York City has 965 shower baths installed in 96 schools distributed as follows: 422 showers in 37 schools in Manhattan, 36 showers in 5 schools in the Bronx, 371 showers in 40 schools in Brooklyn, 128 showers in 12 schools in Queens, and 8 showers in 2 schools in Richmond.

The Board of Education of New York City has abandoned the installation of shower baths in schools situated in the wealthier districts, because the baths are rarely used by those having bathing facilities at home. Shower baths are, however, still installed in the schools located in the poorer districts.

The Board has concluded that the swimming pool is a

greater attraction to the pupils and is adding to the number already installed.

It is apparent from the list of schools given that the city has expended a large sum of money in shower bath equipment for the schools, which, in a majority of cases are not used by the pupils.

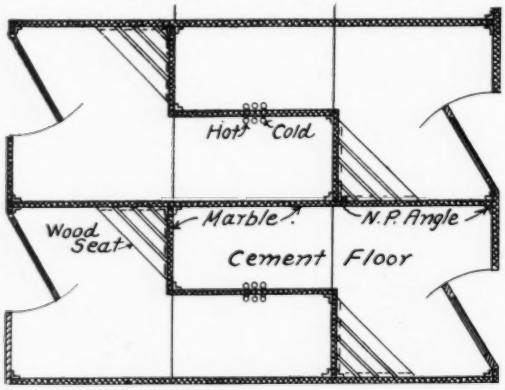


Fig. 3.—Plan of Girls' Showers in Public Schools at Newark, N. J.

A plan and section of a typical shower bath installation in New York City schools are shown in Figs. 1 and 2.

Newark, N. J., has 100 showers installed in four schools. Details of the shower bath compartments in the Newark schools are shown in Figs. 3 and 4. The shower fixtures in the pupils' shower rooms are provided with needle heads, and supplies to the wall. The supply inlets are provided with lock shield controlling valves, permitting the volume of water to be reduced, so as to economize in its use, or the water can be entirely shut off without interfering with the adjoining showers or other fixtures in the room.

The standard height of the bottom of the shower heads above the finished floor line is 7 feet, except where necessary to conform to other building conditions, but in no case is the height less than 6 feet 6 inches.

Pittsburgh, Pa., has 69 showers installed in 12 schools, of these, six also contain swimming pools.

Chicago has provided shower baths in 114 elementary schools and in all of the high schools.

The usual equipment provided for bathing in the Chicago schools consists of six marble shower stalls with shower

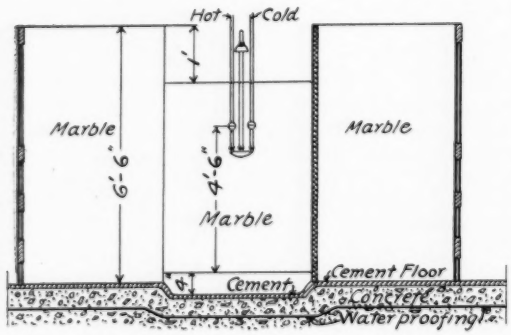


Fig. 4.—Section of Girls' Showers in Public Schools at Newark, N. J.

baths and two lavatories, supplied with hot and cold water; however, in one of the advanced schools, 72 complete shower bath equipments are provided instead of the usual six showers.

One building has 12 showers and 6 lavatories; four buildings have 1 to 7 showers and 1 to 4 lavatories; seventy-nine buildings have 6 showers and from 2 to 6 lavatories; twenty buildings have 4 showers with 2 or more lavatories; twelve buildings have tub equipment with from 1 to 4 tubs and 1 to 4 lavatories; while ten buildings have showers in connection with the gymnasium. The Parental school has 90 showers and 9 bath tubs, and the Juvenile Detention

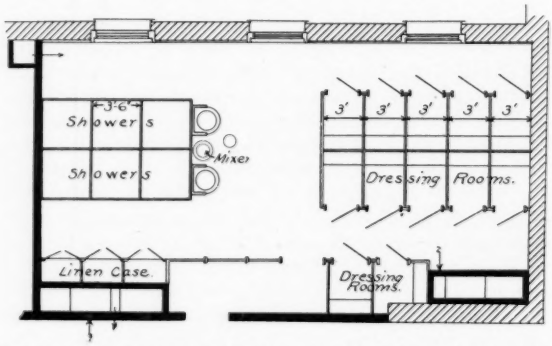


Fig. 5.—Plan of Shower Bath Room in Public School in Chicago.

school has 4 showers. Three of the schools, Scanlan, Carter and Swift, have swimming pools in addition to the shower bath equipment.

Four of the high schools are also provided with swimming pools, as is the Normal Art school, which has in addition 108 showers.

A plan of a typical shower bath room in a Chicago school is shown in Fig. 5.

Details of the shower heads installed in the Chicago schools and an illustration of the connections of shower heads in the Senn High School, Chicago, are shown in Figs. 6 and 7.

Des Moines, Ia., has shower baths in 12 of the grade schools and in 3 high schools. In all of the buildings that

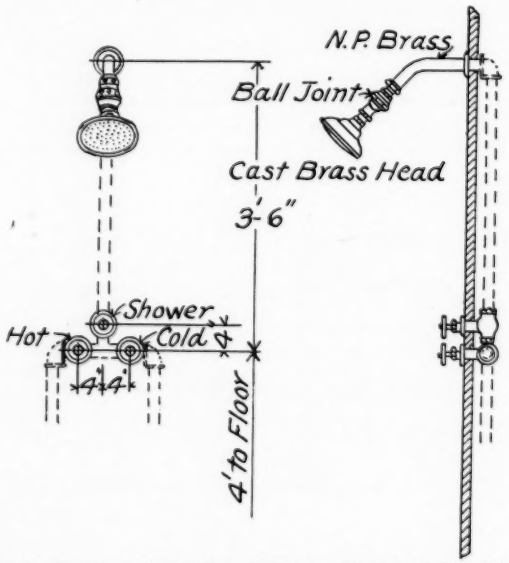


Fig. 6.—Detail of Installation of Shower Head in Public School in Chicago.

have been erected in the last four years a shower bath or bath tub has been included.

Topeka, Kans., has three showers in gymnasiums for each sex in the new addition that is being built to the high school.

In Cleveland, O., there are 263 shower baths in 40 schools.

St. Louis, Mo., has swimming pools installed in four high schools and shower bath equipment in five high schools and nine grade schools.

The shower bath equipment for the pupils of the Glasgow school, St. Louis. Mo., is located in the basement. Sixteen showers are installed, controlled by two mixing chambers.

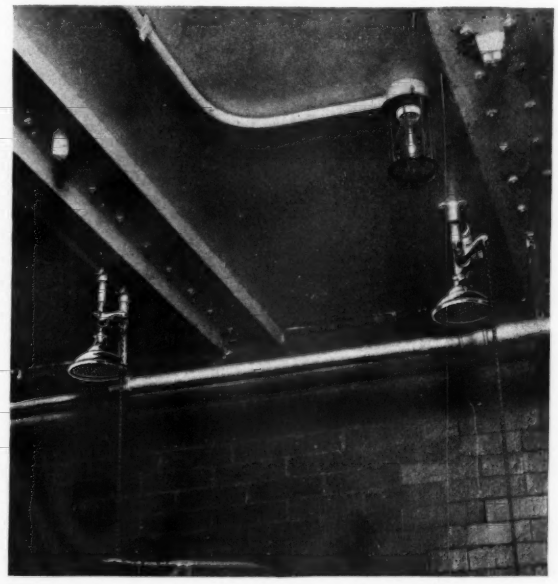


Fig. 7.—Shower Heads and Connections in Senn High School Chicago.

The boys' showers are of an improved pattern 5 inches in diameter with tubular removable face. The girls' showers are perforated rings 20 inches.in diameter.

A plan of the shower rooms in the Glasgow school is shown in Fig. 8 and a detail of the shower head arrangement in Fig. 9.

Little Rock, Ark., has shower bath provision only in the high schools.

Memphis, Tenn., has one shower bath in the Central high school.

New Haven, Conn., has two schools equipped with shower baths.

In the boys' high school in New Orleans, La., there are 12 shower baths and 2 needle baths installed in the gym-

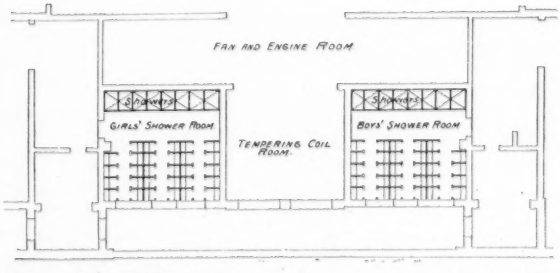


Fig. 8.—Plan of Shower Room in Glasgow School, St. Louis, Mo.

nasium. The bath rooms are fitted with cement floors, each provided with separate drain. In the elementary schools in New Orleans, there are five showers, the stalls have white marble backs, tile floors and separate drains.

Connected with the school system of New Orleans are two buildings devoted solely to gymnastics, one of which is provided with a large swimming pool.

Spokane, Wash., has shower baths in connection with the gymnasium in two high schools, six for each, boys and girls. Three of the grade schools have shower baths for boys and girls.

In Seattle, Wash., shower bath equipment is only installed in one grade school, a district patronized by children from homes which are frequently lacking in such facilities.

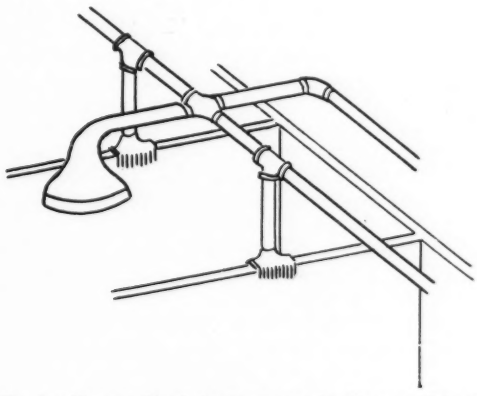


Fig. 9.—Shower Head Arrangement in Glasgow School, St. Louis, Mo.

Four shower bath equipments are installed in four prominent high school buildings, which are used in connection with gymnasium and athletic rooms.

Winnipeg, Can., has 111 shower baths in the public schools for girls and 113 for boys.

A New Use for Bathtubs.

Master plumbers, master steamfitters and others in the trade who own "young" Fords, and have been anxious to keep them clean and sanitary, need worry no more.

"ELMER, HAVEN'T I TOLD YOU NEVER TO WASH YOUR CAR IN THE BATH TUB ON SATURDAYS?!!! TAKE IT OUT TO THE KITCHEN AND LET YOUR MOTHER WASH IT WITH THE DISHES!"

From "The Chicago Daily News."—Copyright, 1915, by H. T. Webster.

The modern bathtub solves the question. According to the cartoon reproduced herewith, Ford owners can wash their machines in the family bathtub with impunity. After the youthful Ford has had a good bath, rinse well under a shower if convenient.

A Retired Plumber's Advice to Beginners

A Letter from Eliphalet Leadbeater, Retired Master Plumber, to His Nephew, Michael Leadbeater, Just Embarked in Business

Transcribed by DANIEL LOUIS HANSON

Petersham, Mass., February 16, 1915.

MY Dear Mike:—And now we have made some progress in getting that Thirty-first Street shop placed on a business basis; everything is ready for a long campaign, the cement foundations for the siege guns have been laid, and the entanglements by which you expect to hold a customer, when once he has gotten inside the lines, are in order. Now for the profits!

In other words, your windows and showrooms, helped by publicity mediums, are pulling customers in, and by watching your buying—both as to quality and price—you feel sure that you can hold these same customers and, through them, add others.

"Every length of pipe, each fitting and all fixtures are carefully inspected before being sent out," you say. "I don't want any comebacks. I can positively guarantee what goes into every job."

But can you, Mike?

Your fixtures and roughing-in material are inspected, you look over every bill before it goes out—yes, Mike, but what about the principal commodity you sell—labor? You sell more labor than you do fixtures and roughing-in material, and on a much closer margin; are you giving it the same vigilant oversight that you are other commodities?

I have, in my day, known more than one master plumber who could see in the finish of tub and lavatory a hole no bigger than the point of the finest cambric needle, and have heard him make such a roar about it over the phone to his supply man that the switchboard girls had to wear earmuffs. Yet he would pass out, in the way of service to his customers, that which drove away more business than if he had installed fixtures as full of pits as is the end of a thimble.

And, Mike, I have known more than one establishment, enterprising in every other respect, sent to the mortuary column by the freedom from supervision the help enjoyed. There are several toboggans the business man can exit himself on, but I think this the quickest and surest; and it is the one most generally used by our line of tradesmen.

The reasons for this partiality of ours are not far to seek; we master plumbers come up from the ranks of the working class; we still cherish some of the time-honored grudges against employers of labor, and if we hold any plans for our business future, among them is a purpose to be "decent to the help." The result in many cases is that our employes run the office and shop, and look upon what really is kindness in our dispositions as timidity toward them. All we masters are expected to do is to furnish the money with which to buy material and housing conveniences—and to meet the payroll.

Mike, treat your employes fairly, but hold a firm grip on the reins; be kind to them—but don't slop over. Remember, that you have got to make a profit on their labor; also—that it is much easier to replace an employe than a customer who has been lost through your help's indifference, or worse.

Customers see more of your employes than they do of you. They form their opinion of your enterprise and honesty from the speech and actions of the employes, rather than from your own. The master plumber can never lift his business higher than the level of his employes. If you are planning for any lifting stunts, try them out first on your help; having accomplished something with them, the rest is easy.

In toning up your employes, remember the many points of contact they have with the customers; in your office; over the phone; collecting bills and doing work. And study out some means by which you can create and maintain among your help a kindly frame of mind toward the trade which makes it possible to maintain a working staff. Put a stop to every discourteous reference to a customer, though he be far away. That will do much in curbing any tendency toward impertinence at closer range. Make every employe feel that he is vitally interested in retaining your present list of patrons; and in increasing its numbers. Hold each of them personally responsible if a customer is lost. Keep before them this—

"Customers are harder to get than are employes."

I have already written you about Telephone Courtesy; but not half enough has been said on that subject. We never shall realize the full value of the telephone till that latest of all inventions—enabling us to see as well as hear the one at the other end of the wire—is perfected. In the meantime we can do something toward making our telephone conversations more effective by never taking down the receiver until we have put on a smile. It is practically impossible for one who is smiling to be gruff of tone or snappy in speech. Then cut out any such opening remark as, "Who is this?" Insist that every one using the telephone begin the conversation with: "This is Michael Leadbeater and Co. on Thirty-first Street, plumbing and heating." Now isn't that business; wouldn't that warm up the heart at the other end of the wire? Instead of that "Who is this?" which makes one red-headed to hear.

It makes for business at both ends of the wire, does such conversation as I have indicated; it makes the other fellow feel good, and it makes your employe a business getter instead of a mere clerk. You can't afford to keep a grouch in your employ, however humble is his position, even if he works for nothing and pays board money besides.

Smile and do business, but be most particular about the smile. Business will follow of its own notion.

Having once caught the "smile while you talk" telephone habit, it is comparatively easy to carry on a personal conversation with customers who come into the store. Only, sight must not be lost of the maxim that such conversation should have a cash value; it should not degenerate into mere gossip about the weather or the war. Its ultimate purpose, on the part of your employe, must be to bring another dollar into the drawer; or—better still—another customer on the ledger. One of the best friends I have in a neighboring market town is a clothing merchant; I talk over business problems with him, when he is at leisure, but do you know, Mike, I never get out of his store without buying something? Some way of other, whether the talk is about the war or the

Mexican situation, he turns on the sales current, and I go out with a bundle. I am mighty glad that you wear size fifteen collars; you shall have some boxes on your March birthday. Does your father wear the same size?

Making the conversation count, that is the point. Cashing in on it, is simply another form of putting it.

Down in Worcester, the other day, while in Mogensen's shop I overheard a case in point. The young woman bookkeeper was handing a receipted bill to a customer, at the same time giving a smile that was worth a hundred cents on the dollar. And I saw that it went with the customer, too, a gentleman of mature years and evidently of some means. Then she said: "If you happen to be over on Park Street just take a look at that new office building near the Bancroft, that we are doing. The foreman will be glad to show you around over it."

Now I don't suppose that such invitations ever had the result of taking the foreman away from his men very many times. But this one had, I imagine, a nice cash-return value to Mogensen, for the customer went out of the door with a smile, that led him straight home or to his factory, determined to find more work for the young woman who had smiles on face and in heart, both, I imagine.

I know there is a difference in office people; some have a way of hitting the keys of the cash register, or the handle of the receipt stamp so that the customer involuntarily dodges his head, and makes him fighting mad. He swears after getting out on the pavement, that he never again will run a bill at that shop—or if he does, not to forget to make a kick about it. Of course, you have no help like that, you can't afford it, being a beginner; later on you won't want them. Then there is the other kind, such as that girl down to Morgensen's, handling each customer in a different way, but always with the idea of getting more business from him—and from his friends.

Cashing in on smiles.

There are people in this world who rather would pay above market price for stuff in places, where service is a pleasure to those who are serving, than to get goods for fifty per cent discount in others, where customers are promptly kicked out into the street after having finished their business. My young Chicago friend—that Twentieth Century master plumber—William J. Lang, does not find it necessary to itemize bills to customers. Of course, he doesn't, nor do others who conduct their business along progressive lines. But there are shops which always will be under the necessity of accounting to their customers—the same customers, if they happened to get in by mistake—for every fitting on a two dollar job, down to an eighth inch close nipple, even.

The smile on the face not only gets into the telephone conversation, but it creeps, somehow, into the business letter, into the bid and, most of all, into the bill. And then it is positively contagious—it infects the customer, too; it keeps down the claim record, it hastens the payment of bills, it just keeps the telephone bell humming with: "Can you send a man to ———?"

The distinguished-looking Gentleman, who had Charge of the Office, a Man of Affairs, hastened forward with Head uncovered and, with many deep Bows, greeted the Customer, a Woman, whose black Mantilla marked her as of the humbler Class.

I often have wished that I could flash upon some huge screen visible to all master plumbers—and their help, too, down to the helper's helper—a scene that I witnessed some years ago in Mexico City. It was in the Zocalo district not far from that National Palace where they change tenants oftener than does a Harlem flat—and in a plumbing shop. The journeymen came in as their jobs were finished, or as soon after as compatible with their social engagements—and turned in their time to the black-eyed senorita, who was cashier. Ceremony was used by both sides in the transaction, a racial courtesy possibly, yet very pleasant to see, and a lubricant to business.

Then came in a customer, a woman, whose black mantilla marked her as of the humbler class in that city of sharp class distinctions. In spite of that the distinguished-looking gentleman, who had charge of the office—evidently a man of affairs, for I later saw him at the Jockey Club—hastened forward with head uncovered and with

many deep bows. She of the black mantilla had seen in the window a faucet filter of European importation—it only cost a peso, fifty cents American, but the senor put a most finished sales talk into the transaction. I couldn't have done so well, even in my palmiest days, on the sale of a hundred dollar tub. Of course she bought, though what she, a peon, wanted of a filter, heaven only knows—at that time her home very likely was on the sunny side of some kind person's house with a few pieces of old iron roofing as a shelter from the cold night winds. But the whole episode, selling talk, wrapping up of parcel and the "adios" at the door as she passed out make up one of the pleasant and profitable memories of those charming days.

Nor, when the customer was gone, did the senor go back to the cage of the cashier and exchange apologetic smiles and pitying shrugs of the shoulders with her of the black eyes; the customer absent was treated with the same deference as when present. Strange people, those Mexicans!

I wish we all could have seen that episode; there would be less talk among us of teaching business methods to Latin-Americans.

Well, well! Here I have taken you to Mexico City, when I meant to discuss that most intimate of all questions to the fledgling master plumber—how to make a working asset of the journeyman plumber. It will have to go in the next letter, Mike.

Your uncle,

Eliphalet Leadbeater.

P. S.—The well driller has lost his point. He says it must have fallen clear through! Used as I was for thirty years to making bills, I still feel nervous when I think of his.

HOW TO FIRE SOFT COAL IN FACTORIES.

"Hand Firing Soft Coal Under Power-Plant Boilers" is the title of Technical Paper 80, just issued by the United States Bureau of Mines, as an aid to the firemen employed in manufacturing establishments throughout the United States. The paper, which contains descriptions of methods of firing soft coal under power-plant boilers and of methods of handling fire so as to have the least smoke and to get the most heat from the fuel, seeks to meet the needs of the men, many without a technical education, who are employed in small plants of 1,000 to 2,000 horsepower capacity. For this reason the language used is plain and simple, and technical terms have been avoided as far as possible. The publication under "General Directions on Firing Soft Coal," makes the following statements:

"When burning bituminous coal under power-plant boilers the best results are obtained if the fires are kept level and rather thin. The best thickness of the fires is four to ten inches, depending on the character of the coal and the strength of draft. The coal should be fired in small quantities and at short intervals. The fuel bed should be kept level and in good condition by spreading the fresh coal only over the thin places where the coal tends to burn away and leave the grate bare. Leveling or disturbing the fuel bed in any way should be avoided as much as possible; it means more work for the fireman and is apt to cause the formation of troublesome clinker. Furthermore, while the fireman is leveling the fires a large excess of air enters the furnace and this excess of air impairs good efficiency.

"The ash-pit door should be kept open. A large accumulation of refuse in the ash pit should be avoided, as it may cause an uneven distribution of air under the grate. Whenever a coal shows a tendency to clinker, water should be kept in the ash pit. All regulation of draft should be done with the damper and not with the ash-pit doors.

"In firing, the fireman should place the coal on the thin spots of the fuel bed. Thin and thick spots will occur even with the most careful firing, because the coal never burns at a uniform rate over the entire grate area. In places where the air flows freely through the fuel bed the coal burns faster than in places where the flow of air is less. The cause of this variation in the flow of air through the different parts of the fuel bed may be differences in the size of the coal, accumulations of clinker, or the fusing of the coal to a hard crust. Where the coal burns rapidly, the thin places form.

"Before throwing the fresh coal into the furnace the fireman should take a quick look at the fuel bed and note the thin spots. In a well-kept fire these spots can be usually recognized by the bright hot flame. The thick places have either a sluggish, smoky flame or none at all. In order to place the coal over the thin places the fireman should take a rather small quantity of coal on his scoop, for it is much easier to place the coal where it is needed with small shovelfuls than with large ones.

"The coal should be placed on the thin places in rather thin layers. If the fireman attempts to fill up the deep hollows in the fuel bed at one firing, the freshly fired coal may fuse into a hard crust thus choking the flow of air, causing the fuel to burn slowly and starting new high places. If the high places in the fuel bed are missed on one or two firings the hard crust at the surface will gradually burn through or crack, thus allowing more air to flow through, and the place will get back to its normal condition. Of course, if the high place in the fuel bed is caused by clinker the flow of air will not be free until the clinker is removed with the fire tool. Whatever may be the cause of the high places in the fuel bed, the fireman should remember that they are places where the coal does not burn. There is no use in placing coal on such a place.

"If the firings are too far apart the coal in the thin spots may burn out entirely, allowing a large excess of air to enter the furnace in streams. If those streams of air are not properly mixed with the gases from the coal, only a small percentage of the air is used for combustion, and most of it passes out of the furnace, depriving the boiler of considerable heat. If, for instance, air enters the furnace at atmospheric temperature, say 75 deg. F., and leaves the boiler at about 575 deg. F., it carries away the heat that was absorbed in raising its temperature 500 deg. F. This heat is lost to the boiler. Another loss of heat occurs when holes form in the fuel bed, because pieces of unburned coal fall through the grate when the fireman attempts to cover the holes with fresh coal. Therefore, in order to avoid the formation of holes, firings should be made at short intervals, particularly if, for any reason, the fuel bed must be kept thin."

Copies of this booklet, No. 80, may be obtained free of charge upon application to the Director of the Bureau of Mines, Washington, D. C.

Where They Lead To.

Uncle Eph had long boasted that he had never needed the services of a doctor, but now he was ill and his neighbor felt that the time had come to call a physician.

"Come, now, Uncle Eph," said she, "we will call whomever you wish—you know there's a good allopath and a good homeopath. Now, which'll you have?"

"Wal," drawled Uncle Eph, "I dunno ez it matters—they do say that all paths lead to the grave."

Heating and Ventilating Industrial Buildings

Special Report on the Development in Heating and Ventilating Industrial Buildings*

By E. L. HOGAN, Chairman

WHEN our great-great-grandfathers came to this country and began to practice their trades, each worked independently in his own little shop. Each had his crude tools and manufactured individually his particular article, whether shoes, chairs, or clothing, from the raw material to the finished product.

Naturally, their heating systems were not elaborate as such were not necessary. Usually a grate sufficed to heat them and the same grate was used to roast their meats.

With the development of American ingenuity the methods of manufacturing gradually changed. The next generation conceived the idea of specializing; finding that if they performed one certain portion of the work of manufacturing they became more expert at this part and were enabled to earn more money. The next generation specialized even more, and so on, until, today, our industrial world is specialized into a number of large organizations, each making some one particular portion that may be assembled into a finished product.

Through this development methods of heating naturally became more elaborate. The old-fashioned fireplace developed into a stove. The need of a centralized heating system developed the furnace placed in the cellar with pipes leading to several rooms, which were heated by warm air. The use of steam for power purposes called for further ingenuity in utilizing this same steam for heating the building.

The industrial building of today is heated by one of three methods: direct steam; direct hot water; or by forced circulation of air which is heated by heaters, supplied by steam or hot water, and centrally located.

The greater number are heated by direct steam because it can be installed by any steam fitter and frequently the superintendent with his millwright and other help can do the work. They know more about this system than any other and are not keen for methods they do not fully understand.

In certain lines of industry where moisture from some drying process or otherwise, must be absorbed by the air within, the blower or hot blast system is most efficient because by means of it the moisture is removed by the circulation of the air that heats the building. Also in buildings where smoke or gases must be removed, the forced circulation is desirable.

In order to study the movement of air currents let us assume a building as illustrated in Fig. 1. This could be used as a foundry, machine shop, car shop, structural steel plant or forge. The side walls are of concrete blocks and glass set in steel sash; the frame work is of steel, the floor of concrete; the roof of reinforced concrete with composition roofing cover.

The natural air currents in the structure would be as indicated by small arrows in the illustration. This movement is caused by the difference in temperature of the air within; that coming in contact with the cold roof, monitors and outside wall becomes cooler and heavier, and consequently falls. The warmer air in contact with the floor rises and circulation is set up tending to equalize the inside and outside temperature.

From a heating standpoint we are interested in a strata covering the lower eight feet of the interior, this must be kept comfortable and fairly uniform. It can be accomplished by creating currents in the upper portion of the building so that no cold air will reach the floor, taking care of the outside walls by radiant heat from radiators placed above and out from the walls, or below and on or near the walls, and taking care of the lower strata of air by heat

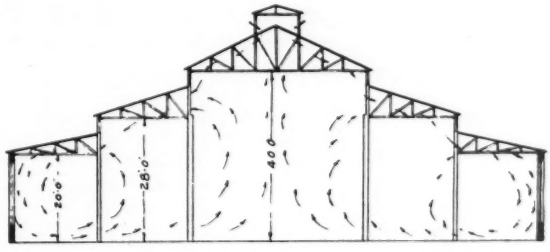


Fig. 1.

from the hot strata above. This method is practically keeping the exposed surface of the structure warm so that there will be no cold currents in the working portion.

In structures of this kind where the peak of the roof is 40 feet or 50 feet above the floor and a working temperature of 65 degrees near the floor is maintained, the temperature near the peak will be approximately 90 degrees. While it is apparent that by keeping the exposed surface warm or keeping a layer of warm air next to it, that the inside of the structure will be warm, nevertheless, it would seem as though it would be better to keep the working strata warm and do so in such a way as to prevent the cold currents from entering this strata. This would reduce the temperature of the air in proximity to the cold exposed surface and decrease the heat loss from the building.

In order to produce results like this it would be necessary to continually mix hot air with the air in the working strata in order to maintain a working temperature. In this system the hotter portion of the building is the lower, and the radiant heat is up and toward the exposed surfaces. Air mixes or diffuses very rapidly and sufficient air must be circulated in the lower working strata to maintain a uniform temperature. Such a system is what is aimed at with hot blast and what is frequently obtained. It is surprising how well and with what a little heating surface and consequent small steam consumption you can heat a building in this way.

A distributing system which would approximate these results is indicated on this plate in Fig. 2.

Frequently it is attempted to heat a structure like this with a hot blast system by simply having outlets in the mains and no drop pipes. In this case it would be necessary to direct air toward the outside walls and downward at various angles in order to produce a distribution and

*Paper presented at the twenty-first annual meeting of the American Society of Heating and Ventilating Engineers, held in New York City, January 19-22, 1915.

the heating would revert to a condition where you would have to warm or produce a layer of warm air next to the exposed surfaces and in this it would be the same as a direct radiation system. The exposure in this case would be larger and the usual method of figuring would not suffice.

In figuring the heat losses from a building you should first determine how you are going to heat it and then it will be possible to determine what the difference in temperature may be between the inside and outside of the various parts, such as outside wall, glass, roof, monitors,

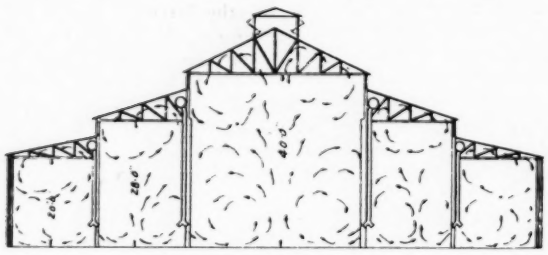


Fig. 2.

etc. As it is now, we take the temperature desired and assume that this is the inside temperature all over and with all methods of heating. The heat losses from the building shown in Figs. 1, 2 and 3 would probably be determined as follows:

Inside temperature, assume 65 degrees.

Outside temperature, corresponding 0 degrees.

Exposures would be as follows: Exposed wall surface, wall glass surface, roof, monitor wall, monitor glass and floor.

Using constants for radiation losses our table of losses would be as follows:

Kind of Surface.	sq. ft.	Diff. in Temp.	Constant.	Con. x Temp. diff.	Heat loss in B.t.u.
Outside wall.....	9,040	65	.33	21.45	194,000
Outside glass.....	10,760	65	1.2	78.	838,000
Outside roof.....	38,400	65	.3	19.50	711,000
Monitor wall.....	3,600	65	.4	26.	93,600
Monitor glass.....	4,800	65	1.35	87.8	422,000
Monitor floor.....	36,000	35	.31	10.85	391,000
					2,649,600

Total heat loss equals..... .....2,649,600 B.t.u.
Heated day time, only add 10%..... 264,900 B.t.u.
For filtration of air on windy days add 10%... 264,900 B.t.u.

3,179,400 B.t.u.

Total cubical contents of structure = 1,180,000 cu. ft.
With a condensation of ¼ per sq. ft. of direct radiation, this structure would require 13,200 sq. ft. or 1 sq. ft. for every 89½ cu. ft. of contents.

With direct radiation placed along the outside walls or suspended from the roof trusses the average temperature between the inside and outside of the exposed surface would be greater, the heat loss approximately 3,663,000, and the radiation required would probably be approximately 15,250, or 1 sq. ft. to 77.4 cu. ft., providing for the same extra 10 per cent to heat up quickly in the morning where the building is used during the day time only and also for loss due to infiltration of air on windy days.

Now if a hot blast system were used with drop pipes so as to distribute the air over the working strata, the average loss from the building would in all probability be approximately 2,680,000 allowing for the same extra amounts under similar conditions. However, to partially offset this, is the loss in temperature of the air due to radiation from the distributing ducts. This amounts to approximately 8 per cent, varying with the shape of building or the extent of the distributing ducts. This would be equivalent to increasing the radiation loss by 8 per cent which would bring it up to 2,900,000 B. t. u. Thus it would seem that by applying the heat to the area where it is required, we would save approximately 21 per cent of steam required. This would only be possible with a blower system and with distribution to the strata required as indicated in Fig. 2.

If the drop pipes or ducts were stopped within 3 ft. of the main duct and the air directed out toward the outside walls and down, the problem would become similar to the direct radiation installation and the losses would be between 3,179,400 and 3,663,000 which would be more nearly correct, and in this event the saving due to the use of a properly designed hot blast system would be approximately between 9 per cent and 21 per cent.

Owing to the fact that a hot blast system can be overloaded and is also capable of forcing the heat to all parts of a structure under adverse conditions, the average purchaser expects a great deal more from it than from direct radiation and our experience has been that a hot blast system has to do about 20 per cent better work than would be expected from a direct job. A great deal more is expected of something which is more conspicuous and which has a moving or operating part.

There is one thing which should be kept in mind and that is that as the outside temperature rises and the requirements become less, the temperature of the air or the quantity of the same, may be reduced, and in practice this is done so that the average amount of steam used for a season is much lower than the maximum requirements.

With a direct radiation installation the temperature of the steam cannot be lowered because generally exhaust or low pressure steam is used and hence the only way to cut down the quantity is to cut off certain parts of the radiating surface. This does not distribute the heat as well as before and therefore is not generally done. The method pursued is to open the windows and increase the radiation loss to a point where it will maintain a comfortable temperature and while the average outside temperature is higher than the maximum requirements the quantity of steam is not reduced materially.

Now as regards cost of installations. The design and manner of fan blast application is something that can always be worked out to good advantage though the method of application must necessarily depend upon the character of the building and its uses.

The ordinary industrial building presents the simplest of all problems. As a rule the per capita space for the workmen is large and the heating only is of paramount importance while ventilation is, in a way, incidental. As a rule ventilation can be secured by allowing the fan to draw its air from the building, thereby turning the air over and over and merely adding to the heat necessary to offset the leakage and radiation losses. To this end it is desirable that apparatus be placed as near to the center of the building as possible so the circulation is nearly uniform from all sides. Such a location very much simplifies the distributing arrangement and materially reduces the cost.

From the apparatus the air is discharged into underground or overhead pipes to get to its proper destination. It follows from the above, however, that the best results are obtained by discharging the heated air near the floor and outward so as to distribute it as nearly uniform as possible. It is usually most convenient to carry the piping overhead in the manner shown in Fig. 2.

The average class of industrial buildings can very often be heated satisfactorily with a limited number of ducts by discharging the air at high velocity and thus compelling it to continue its direction of movement for a considerable

distance without the use of conducting pipes. This simple construction must be adapted to the character of the work carried on in the building, extra refinement in the manner of distribution being unnecessary where the workmen are actively employed. However, great care should be used in such a distribution not to have the air currents strike the occupants, as many systems have been condemned for this reason—no fault of the heating but of the distribution.

In other cases, when obstructions interfere, the air can be forced only a short distance and local distribution is necessary. This is common in the ordinary car paint shop. There the air is generally discharged downward toward the floor through pipes extending down between the cars. This not only heats the building but the time of drying is very materially decreased.

A similar problem is the case of a locomotive roundhouse where a blower system can be made to serve a double purpose. The general heating can be accomplished by discharging the air from overhead pipes toward the walls on either side or it may be utilized as a means of rapidly melting the snow and ice from the running gear of the engines by discharging all or a part of the warm air into the pits.

Industrial buildings two stories and higher can very often be equipped and satisfactorily heated without any distributing pipe connections by having vertical flues built in the walls from which the air is discharged toward the opposite side through openings from 8 to 10 ft. above the floor line. These flues add but little to the cost of the building if the same are taken care of in the architectural design.

Whenever the flues can be built in the walls and the distributing ducts are of moderate extent the system will figure less in first cost than any other capable of attaining the same results.

From the standpoint of equivalent results a blower system of heating can be installed at no greater expense and with as much profit to the contractor as a system of direct radiation. It can be overloaded or can be operated as conditions require. In this way the steam consumed is minimum. If motors are used it might cost more to operate the fan but the saving in steam would more than offset this. There is the added advantage that ventilation is

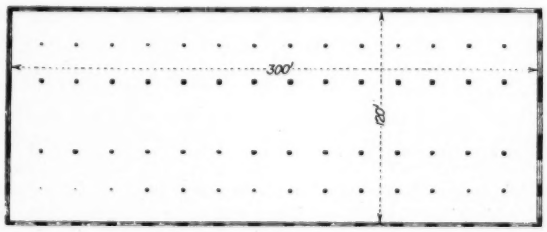


Fig. 3.

possible and where moisture is to be removed there is no comparison, as circulating air is the universal absorbing medium. In many cases, for no greater expense during the year, ventilation and heating can be produced for what heating formerly cost.

One feature of hot blast heating that is particularly apparent to us is that most contractors do not have the confidence in their ability to make the installation a success that they do with direct radiation. As a result, very often direct radiation is resorted to where a fan system would be more satisfactory and economical. We think this is due possibly to the feeling in general that a fan system is more or less guess work. Nothing is further from the truth, for the science of hot blast heating has been developed until absolute results can be guaranteed by the leading concerns.

We have a suggestion to make to the society in closing which we think worthy of your consideration.

From what we can learn we have no standards of heating or methods of determining heat losses. We have no standards of ventilation, or methods of testing installations. Frequently we see specifications for electric motors requiring that they comply with the requirements of the American Institute of Electric Engineers. Why should not the heating of a building be figured according to the standards of the A. S. of H. & V. E.? This would protect the public and improve the standing of the business and eliminate the class of guessers so detrimental to us all.

E. L. Hogan, chairman; J. H. Kassa, C. C. Cheyney, Committee.

Questions and Answers

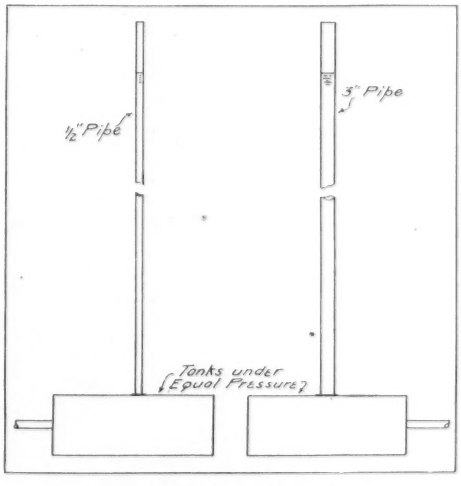
PROBLEM CONCERNING WATER PRESSURE.

Editor "Domestic Engineering":—My sketch shows two tanks under the same pressure, with a ½-inch pipe taken off one, and a 3-inch pipe off the other. In which pipe will the water be elevated to the greater height?

Tuscola, Ill. P. C. A.

Our illustration shows correspondent's problem. Under the conditions named, the water would rise in the two pipes to the same level.

Suppose for instance, that the pressure came from an elevated tank, with the water carried down through a



Water Pressure Problem.

pipe to the low level (that of the two boilers), and then horizontally, so that the ½ and 3-in. pipes could be connected. This would then form a connecting system of piping. Physics tells us that water will seek its own level, and we would expect therefore to see the water standing at the same level in the two pipes as in the elevated tank.

While the conditions of correspondent's problem are somewhat different from our example, the results would be the same.

TWO HOT WATER SUPPLY PROBLEMS.

Editor "Domestic Engineering":—We enclose two problems on which we would appreciate your assistance.

Fig. 1 shows a tank fed system that is supplied from street main, attached to coil in furnace, to heat 50 ft. radiator, and to supply sink. With check valve in use, coil burns out in about a month, and when not used of

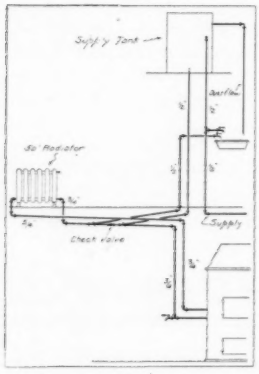


Fig. 1.

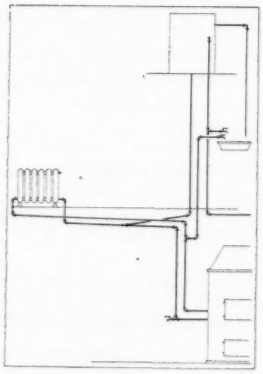


Fig. 2.

course we cannot get hot water at sink. How can we get hot water at sink without check valve, or prevent coil burning out? We do not want to use a range boiler, but know of no way without using one.

Fig. 3 shows a farm system, with tank in a chamber, and fixtures supplied from a spring, which makes it

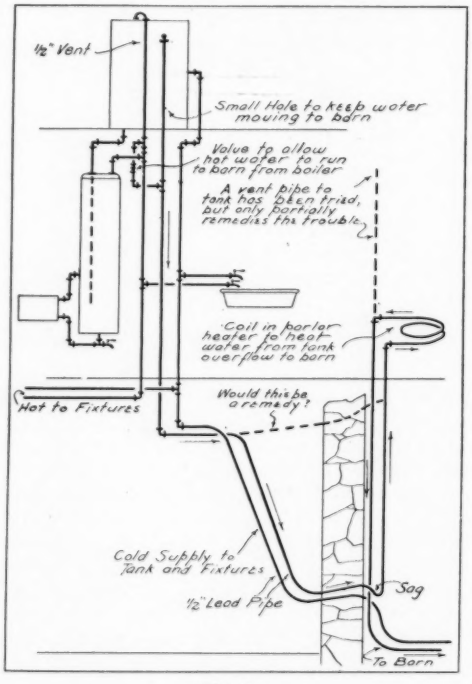

½" Vent
Small Hole to keep water moving to barn
Valve to allow hot water to run to barn from boiler
A vent pipe to tank has been tried, but only partially remedies the trouble
Coil in parlor heater to heat water from tank overflow to barn
Would this be a remedy?
Hot to Fixtures
Cold Supply to Tank and Fixtures
½" Lead Pipe
Sag
To Barn

Fig. 3.

necessary to have the water constantly moving. The hot water supply system works perfectly, but the overflow that runs through parlor heater to barn, to warm water for stock, seems air bound. How can we remedy the trouble?

Morrisville, Vt. E. B. & S.

Correspondent presents two very interesting problems. The first one is shown in Fig. 1. To supply hot water to fixtures without the storage that a range boiler gives, is somewhat unusual. In reality it seems to us that the radiator actually acts as a storage of hot water. We do not like the arrangement nearly as well as with a range boiler, but if it is satisfactory to the users that is all there is to it. Apparently when the furnace is not in

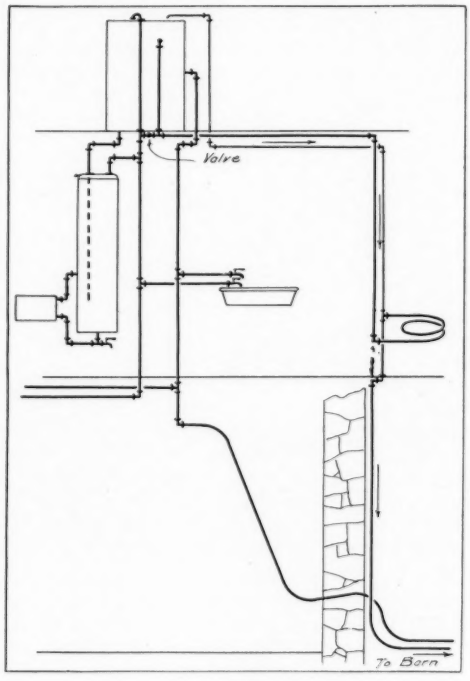


Fig. 4.

use, hot water cannot be drawn. We do not see the logic of connecting the hot water supply to the sink off the return from the radiator, and our recommendation would be to cut out the check valve and connect the supply to sink as shown in Fig. 2. This method of connection will favor the radiator. If the reverse is desirable, it could be obtained in a similar manner, by taking off the radiator connection back of the sink connection. We think these changes will overcome the difficulties mentioned.

The second problem is shown in Fig. 3. The head provided by the tank, which is only a very short distance above the boiler, is so small that it needs only the slightest opportunity for the piping to become airbound. This opportunity may be presented by the sag in the lead pipe. It seems probable that if the line to the coil was run as shown by the dotted line, and the vent pipe taken from the top of the coil, the trouble might be overcome, although we think a better method could be used. The arrows will show what a round-about way the overflow water travels to the barn.

We would suggest that the method shown in Fig. 4 might be an improvement, although it is not an ideal method. We believe from correspondent's letter, that in passing through the coil in the stove, the water is only warmed, and not raised to a high temperature. It should be remembered that hot water tends always to rise, whereas in this case it must travel down, the latter course being more easily taken when, as in this case,

the water is only warmed, and not actually made hot. In other words, the warm water reaches the barn only by gravity, and not by flowing to it as hot water flows when the piping is properly installed. If the water became hot in passing through the stove, we think the only method would be to carry the flow from the coil up to the ceiling, then twining or looping down and passing on to the barn, with a small vent pipe taken out of the top of the loop.

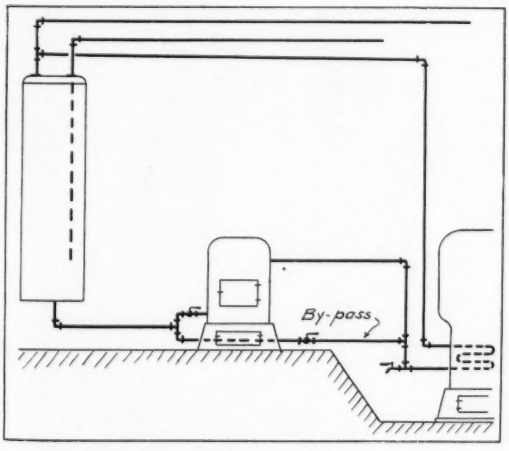
We would advise first trying the change that correspondent himself suggests, as less expense for changing is involved.

A "SUPER-HEATED" SYSTEM.

Editor "Domestic Engineering":—In times past I have had the same trouble as "K. F. R.," as described on page 141 of your January 30th issue, and have overcome it in the manner shown in my sketch. In submitting this, however, I am not criticising your method in any way. This method of mine I call a super-heating system.

Philadelphia. T. T. H.

We have reproduced the sketch of "T. T. H.'s" "super-heated system," exactly as he has drawn it. Apparently



A "Super-Heated" System.

this is something new, and we wish our friend had described its action. We think he must have had something in mind of far different nature than his sketch shows, for we can make nothing out of it whatever. The connections for the small heater are entirely past our understanding, but we can assure "T. T. H." that as shown they are useless. Try again, and possibly we shall be able to say different things of a second attempt.

CLAIMS AIR BOOSTS PRICE OF WATER.

Editor "Domestic Engineering":—Will you kindly tell me what one can do to prevent air from traveling through water pipe and running the meter?

When a faucet is opened at any time we get lots of air and it runs the price of water out of sight.

Hillsboro, Tex. H. E. E.

The problem presented in correspondent's communication is a very peculiar one if he is right in his deductions. We never heard of any such thing as this, particularly the working of the meter by air, and it is a question whether correspondent is right or wrong in this respect.

Of course all water contains more or less air, but if there is such an excess as his communication seems to indicate it would seem that they must be pumping air into the mains at the pumping station for this looks to be a direct pumping system.

As stated before, we have never heard of any such condition and we believe it is questionable whether the meter is working by air.

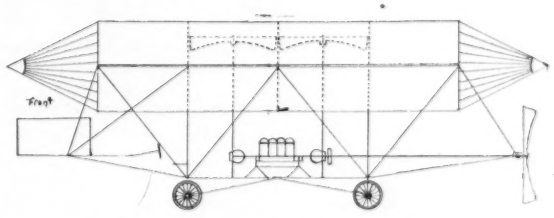
IOWA PLUMBER BECOMES AIR-MAN.

Some master plumbers, and they are not few in number, have for years been "up in the air," on the overhead expense proposition, but it is exceedingly seldom that one hears of a man who has solved the overhead prob-

E. Z. Mack, of Marshalltown, Iowa.

lem in his business, and still goes up in the air. And yet, as the poet has fittingly said, "truth is stranger than fiction."

We have recently been apprised of the fact that E. Z. Mack, a master plumber of Marshalltown, Ia., has quit worrying about overhead expense, and to such an extent that he is preparing to take it E. Z., or rather "Easy," when he goes up in the air in his air craft which he is constructing on the mechanical lift theory. He has been flying over plumbing and heating shops in big airships in the vicinity of his home town on a number of occasions. But he



Side View of E. Z. Mack's Airship.

always rode in some other man's airship. Now he is building one for himself. The total plane surface of the machine will be 714 square feet and will be christened the "Pegasus." It will very likely be ready for its first flight in a few weeks. The body and truss work of the craft will be of wood and aluminum throughout. No doubt the "Pegasus" will be an "E. Z." sailing machine

Maine Master Plumbers in Annual Convention

Maine Master Plumbers' Association Held Successful Convention in Augusta, Me., on February 9th.

How to raise the business standards of the plumbing trade in Maine and establish the business on the same paying basis as that of other kinds was the prevailing topic of discussion at an all-day session of the Maine State Association of Master Plumbers, which was held in Union Hall, Augusta, on Tuesday, February 9th. It was the annual meeting of the association and the attendance was large while the meeting itself was one of unusual helpfulness. President F. E. Wheeler, of Woodfords, presided at the sessions.

The special guests of the day included Governor Oakley C. Curtis, of Maine, National Vice-President James S. Cassedy, of Cambridge, Mass., President George Smith, of the Massachusetts State Association, and William J. Hyland, of Springfield, Mass.

The morning session opened at 10 o'clock and reports of the work of the past year occupied most of the time until noon. The report of the special committee which has been conducting a campaign for new members was particularly pleasing showing an increase over last year of 54. President Wheeler, Secretary Eugene Goss, of Lewiston, and Messrs. Smith and Hyland, of the Massachusetts association, have recently toured the State of Maine and the increased membership was largely due to their efforts.

The remainder of the forenoon session was devoted to an illustrated talk by Mr. Hyland on "Overhead Expenses." Mr. Hyland used a blackboard to explain his talk, which proved very instructive.

At the close of the forenoon session the company transferred its activities to Hotel North, where an excellent dinner was served and then visited the state house and after inspecting the building was photographed on the state house steps with Governor Curtis.

The election of officers for the ensuing year was the first business disposed of in the afternoon. The election resulted in the choice of the following: President, T. W. Kerrigan, Lewiston; vice-president, P. A. Mahoney, of Meyers & Mahoney, of Portland; secretary, J. E. Donovan, of Winthrop; treasurer, D. A. Calhoun, of Wiley & Calhoun, of Portland. The secretary and treasurer were re-elected. Members of the executive committee are to be named at a later date, by the new president, who will also select a committee to arrange for the annual midsummer outing.

Delegates and Guests Attending the Annual Convention of the Maine State Association of Master Plumbers at Augusta, Me., February 9th. Governor Oakley C. Curtis, of Maine, is in the Center of the Front Row (marked X).

Addresses on trade subjects filled in the time for the remainder of the day. The first speaker was National Vice-President Cassedy, whose subject was "The National Association and Its Benefits to the Plumber." President Smith, of Massachusetts, followed, discussing various phases of the plumbing business and laying particular stress on the subject of overhead expenses. Other ad-

dresses were made by Retiring President Wheeler and the new president, Mr. Kerrigan. The meeting adjourned at 4:30 but many of the delegates remained in the city until evening.

The following were present at the sessions: F. E. Wheeler, of Portland; Edward F. Kelley, Jr., of Bangor; George Smith, of Springfield, Mass.; W. J. Hyland, of Springfield, Mass.; J. S. Cassedy, of Cambridge, Mass.; John B. Smith, of Lewiston; Frank A. Davis, of Portland; Eldrith Arnold, of Auburn; J. E. Donovan, of Winthrop; C. H. Babb, of Bangor; W. A. Sawyer, of Woodfords; J. H. Duffey, of Portland; H. A. Young, of Auburn; C. Madsen, of Portland; F. C. Park, of Orono; F. A. Taylor, of Freeport; T. W. Kerrigan, of Lewiston; G. B. Ridley, of Brunswick; N. J. Prescott, of Sanford; John Fardy, of Waterville; J. H. Kee, of Lewiston; A. P. Goodhue, of Belfast; B. J. Woodman, of Westbrook; Alphonse Dulac, of Lewiston; Patrick A. Mahoney, of Portland; D. A. Caihoun, of Portland; C. F. Dolliver, of Lewiston; H. R. Skillings and Eugene Goss, both of Lewiston.

Retiring President F. E. Wheeler, of Woodfords, Me.

President-Elect T. W. Kerrigan, of Lewiston, Me.

About forty members of the Portland, Me., Master Plumbers' Association attended the annual dinner of the organization held at the Congress Square Hotel, in Portland, February 8th, on the eve of the annual state convention at Augusta. National Vice-President James S. Cassedy, of Cambridge, Mass., and George Smith, of Springfield, president of the Massachusetts State Association, were the principal guests. F. E. Wheeler, of Woodfords, presided. Messrs. Cassedy and Smith both discussed conditions among the craft in Maine and outlined the advantages of associations.

JERSEY CITY PLUMBERS ELECT OFFICERS.

The Master Plumbers' Association of Jersey City, N. J., at its recent annual meeting, elected the following officers for the ensuing year: President, Jos. A. Sprouls; first vice-president, John M. Pentland; second vice-president, John Anderson; third vice-president, Chas. Werner; secretary, Thomas P. Haley; financial secretary, Valentine Ringle; treasurer, William J. Cross; sergeant-at-arms, A. N. Crane; trustees, J. J. Corcoran, J. J. Coppinger and Rudolph Ewald. Michael P. Moran declined the renomination to the office of secretary and he retires from this office after having filled it faithfully and efficiently for many years.

ALBANY DINNER A BIG SUCCESS.

State President Geo. L. Brucker Guest of Honor at Albany Master Plumbers' Annual Banquet.

The master plumbers of Albany, N. Y., paid tribute to their state president, George L. Brucker, of Utica, at their thirteenth annual dinner, held at the Hotel Ten Eyck, on Wednesday evening, February 10th, Mr. Brucker being the guest of honor. A reception in the parlors of the Ten Eyck for Mr. Brucker preceded the main event and shortly after eight o'clock the guests filed into the neatly decorated dining hall. The guests numbering nearly one hundred were seated at sixteen circular party tables. Suspended behind the speakers' table was a large medallion which blazoned forth the name of the state president in incandescent lights.

Geo. L. Brucker, of Utica, N. Y., President of the New York State Association of Master Plumbers.

The dinner was exceedingly elaborate and a big success, and it was followed by a number of interesting speeches.

In opening the speechmaking James H. Doody, president of the Albany Association, spoke of the history of the Albany organization, its origin and growth and its members who had served the state and national bodies as officers, among them, Horace Westcott, on whom the early members pinned their faith for the success of the embryo association.

Unfortunately, Francis M. Hugo, secretary of state, who was to be the principal speaker, was unable to attend on account of the death of his law partner in Watertown.

Thomas A. O'Malley was toastmaster. He read communications of regret from National President S. Louis Barnes, of Philadelphia; J. J. Hannegan, president of the New York Association; Governor Charles S. Whitman, James B. McEwan, former mayor of Albany; Senator J. W. Wadsworth, Jr., and Frank B. Lasette of New York. They all sent congratulations to President Brucker.

Edward J. Ryan, one of the younger members of the association, in a very able address welcomed the guests. Mayor Joseph W. Stevens, of Albany, was greeted with standing applause. He called attention to the coming annual encampment of the Grand Army of the Republic in Albany. On account of the nature of this organization, he said, it would most likely be the last encampment to be held in the city and asked for the support of the plumbers to make it a memorable one. W. J. Flynn, the plumber-coroner of New York, was called on to take the place of the absent secretary of state. He urged the members to spread the spirit of organization and also took the opportunity the occasion afforded to thank them for their support in his various civic activities.

President George L. Brucker was the next speaker. The guests greeted him with standing cheers. Mr. O'Malley in his introduction referred to him as "not a big noise, but busy as a bee."

Impromptu speeches were made by former President

Frank L. Beyer, of Buffalo; Treasurer Charles A. Campbell, of Watertown; J. B. Witte, of Utica; Ted. Moran, of the Victor Brass Mfg. Co.; John E. Dugan, of Albany. Mr. Dugan emphasized the need of public comfort stations in Albany and took the mayor to task for not fulfilling his promise, made at the last banquet, that the city would be furnished with public stations within a year. He pointed out that the only provision in the capital of this nature is the New York Central Railroad Depot. He urged upon the members and the city officials present to further the cause of comfort stations. No city is complete without them, he continued, and he expressed the hope that by the time the next annual banquet is held the city will boast at least two such stations.

Dr. A. Sautter, health officer of the city, spoke of the relation of physician to plumber. T. E. Kerwin, of Albany, told the members about the progress made in the new licensing regulations. Larry F. Bannon, of Kingston, proposed a standing toast to the late national president, T. A. Hill.

William Brownlow, chief plumbing inspector of Albany; State Secretary W. T. Cantwell, of Utica; M. J. Hawkins, of Albany; John Moran, T. F. Nolan and City Assessor John Rea, of Albany, closed the program with impromptu speeches.

The menu was contained in an artistic ten page booklet which pictured in half tones George L. Brucker and local President J. H. Doody. It also contained an entertaining program of songs which were sung during the evening. The reception and dinner committee was composed of Thomas F. Nolan, chairman; F. E. Schimpf, secretary; James F. Gorman, treasurer; Joseph Nicklas, A. J. Eckert, James H. Doody, Thomas A. O'Malley and Edward J. Ryan.

NEWARK MASTER PLUMBERS' BANQUET.

Retiring President Louis Maier is Honored.

The Master Plumbers' Association of Newark, N. J., celebrated its twentieth annual banquet and ladies' night on Wednesday evening, February 10th. The increasing popularity of these entertainments which have marked the social season of Newark for a score of years, again attracted the plumbers and their friends in large number.

The varied program which includes dining, professional entertainment, speechmaking and dancing was again in evidence. An excellent dinner was served, the courses being interspersed with songs by the diners, or selections of humor or solo by McGummess, Harrison or Caffrey, a trio that can and does entertain.

J. J. Turbett was chairman, and among those who responded to impromptu calls were: President Chas. F. McGuire, A. S. Walker, past National president; J. C. Sprouls, president of the Jersey City Association; and S. F. Wilson, past National secretary.

Retiring President Louis Maier shared with the ladies the position of a guest of honor. This was sub-rosa until his successor in the chair, Chas. F. McGuire, arose and presented him, on behalf of his associates, with a gold watch and chain. That Mr. Maier is deserving of such recognition is patent to all who know him, even outside his own city and state. He has served the Newark association as its president for the past seven years, rendering a service, in unflinching loyalty and incessant work, which will not soon be forgotten.

Following the main attraction a reception was held in the parlor until the hall was cleared for the dancers.

A dozen or more numbers on the latter program kept the merrymakers tripping round the floor until home going time.

The members of the entertainment committee who so ably acquitted themselves were: J. J. Turbett, chairman; F. J. Sturn, treasurer; Elmer Lutz, Robert Berla, Matthew J. Brady, Charles J. Sturn, secretary, and Chas. F. McGuire, ex-officio.

On the ladies' reception committee were: Mrs. J. J. Turbett, Mrs. F. J. Sturn, Mrs. Robert Berla, Miss Vara Lutz, Mrs. M. J. Brady and Miss May McGuire.

BOSTON MASTER PLUMBERS' ANNUAL BALL.

Two hundred master plumbers of Boston and vicinity accompanied by their ladies, attended the thirty-second annual ball of the Boston Master Plumbers' Association Wednesday evening, February 10th. Horticultural Hall was the scene of much gayety and unquestionably the affair was one of the best parties that the association has ever held.

National Vice-President James S. Cassedy was the honor guest of the evening. Others in attendance were State Vice-President John B. Feehan, of Lynn; representatives of the Boston city government; William A. Wheater, plumbing supervisor of the city of Boston, plumbing inspectors of Boston and vicinity, and salesmen from the prominent jobbing houses of the city.

Previous to the dancing which started at 9 o'clock the orchestra rendered a pleasing program. John W. Zehringer served as floor director, aided by James Gillespie, J. P. Williams, P. J. Sullivan, John J. Vogel, W. A. Tucker and P. A. Lang. During the evening a buffet lunch was served.

The committee in charge of the affair was made up of President W. P. Jones, Financial Secretary J. Preston Perham, P. J. Sullivan and J. W. Zehringer. The reception committee was as follows: Former National Presidents David Craig and D. G. Finnerty, Edward C. Kelley, William N. McKenna, C. H. Cronin, Daniel Shannon, Robert F. Brown, John Manning, Andrew F. Curtin, John J. Vogel, National Vice-President James S. Cassedy, P. J. Sullivan and Orren C. Poole.

LADIES OF EVANSTON ASSOCIATION GIVE RECEPTION.

Over one hundred persons were guests of the Ladies' Auxiliary of the Master Plumbers' Association, of Evanston, Ill., at a reception and dance given at the Wilmette Woman's Club, on Saturday evening, February 13th.

Promptly at 8:30 o'clock in the evening, the dancing began, and to the strains of excellent music, merry couples glided gracefully over the glazed floor.

John J. Cahill, of the Evanston association, arrayed in his dress togs, and his genial wife were among the shining lights in and about the ballroom.

Judge A. S. McKenna, who also holds down the job of plumbing inspector at Kenilworth, was present in all his legal majesty.

J. L. Bauer, of Weil Bros., acquitted himself with a charm and grace that reflected credit upon the good judgment of his house in selecting so worthy a representative at social functions of this kind.

Edward Woods, of the Federal-Huber Co., garbed in a

dress suit of the latest cut, waltzed gracefully with various charming matrons and mademoiselles.

The affair was officially carried out by the ladies. The men had little or nothing to say in the matter, except to smile and obey orders. The most attractive part of the evening's program was the wholesale disappearance of some very choice specimens of the culinary art. The estimable ladies imbued with a noble desire to please the men, had brought home-baked cakes and other refreshments dear to the heart of man.

The ladies who brought provisions were: Mrs. James Park, Mrs. George S. Moore, Mrs. John J. Cahill, Mrs. George Kearney, Mrs. A. McKenna, Mrs. George Woods, Mrs. Charles Wallace, Mrs. M. O'Malia, Mrs. Charles Beck and Mrs. John Doose.

WILKES-BARRE PLUMBERS PREPARE FOR STATE CONVENTION.

The twenty-first annual convention of the Pennsylvania State Association of Master Plumbers will be held at Wilkes-Barre, Pa., May 18th and 19th, with headquarters at Hotel Sterling. The local association aims to make this convention a memorable one. Entertainment and souvenirs will be provided for the visiting ladies and a dinner will be given on the last day of the convention. Provision is being made for the display of plumbing goods, fixtures, specialties and tools. Secretary Richard Turner, 27 East Northampton Street, Wilkes-Barre, Pa., is chairman of the Exhibit Committee.

PITTSBURGH MASTER PLUMBERS' ANNUAL BANQUET.

The fourth annual banquet of the Master Plumbers' Association of Pittsburgh, Pa., and Vicinity was held in the large English room of the Ft. Pitt Hotel on Tuesday evening, February 16th. About 250 members and their lady friends, wives, mothers, sisters and sweethearts attended. The affair was one of the most interesting ever arranged by the Association, for following the banquet and speaking, there was a season of dancing.

Edmund M. Tate, formerly secretary of the Association, and who has had much to do with the affairs of the State Association in past years, but who is now secretary of the Builders' Exchange of Pittsburgh, was the toastmaster of the evening. The menu consisted of eight courses.

Mayor Joseph G. Armstrong, of Pittsburgh, was unable to speak at this event, on account of having been summoned to Harrisburg, and in his place, Assistant City Solicitor W. M. Irons spoke on "Our City."

He was followed by J. Rodger Flannery, who spoke on "European Business for Pittsburgh." Mr. Flannery spoke knowingly, for he recently returned from an extended trip abroad to study the business situation in Europe, as a result of the current European War. He made the trip in the interest of the Foreign Trade Department of the Pittsburgh Industrial Development Commission.

"Advantages of Industrial Education" was the theme of an address by Dean C. B. Connolley, of the Carnegie Technical Schools. Mr. Connolley is well known to the members of the Association, having addressed them upon several previous occasions upon the educational work of the schools, of which he is an instructive head.

Prof. M. J. McMahon had "A Word to the Ladies" and Councilman W. Y. English spoke briefly upon "Government." Marcus Aaron, one of the original members of the Pittsburgh Board of Education, also spoke in an interesting vein.

The ladies attending were presented with pretty souvenirs in the shape of neat silver picture frames.

During the evening, retiring President F. J. Hanley was taken by surprise by being presented with a handsome mahogany chime clock set, the presentation speech being made by G. S. White.

February 23 and 24, 1915.—The Minnesota State Association, at St. Paul, Minn., with headquarters at Builders' Exchange.

February 24, 1915.—Sixty-seventh regular meeting of the Central Supply Association, in Chicago, with headquarters at the Auditorium Hotel.

March 1 and 2, 1915.—Missouri State Association of Master Plumbers, at Kansas City, Mo., with headquarters at the Coates House.

March 8 and 9, 1915.—Kansas Master Plumbers' Association, at Wichita, Kans.

March 8, 9 and 10, 1915.—Indiana Master Plumbers' Association, at Laporte, Ind.

March 9 and 10, 1915.—New York State Association of Master Plumbers, at Syracuse, N. Y., with headquarters at Hotel Onandagua.

March 11, 12 and 13, 1915.—Montana Master Plumbers' Association, at Billings, Mont.

March 17 and 18, 1915—The National Association of Brass Manufacturers, at Detroit, Mich.

March 18 and 19, 1915.—The Nebraska Master Plumbers' Association, at Lincoln, Neb.

March 22, 1915.—Tennessee State Association of Master Plumbers, at Nashville, Tenn., with headquarters at the Tulane Hotel.

April 6 and 7, 1915.—The Michigan State Association of Master Plumbers, at Detroit, Mich.

April 8, 1915.—The Michigan State Association of Master Steam and Hot Water Fitters, at Detroit.

April 19 and 20, 1915.—Eleventh annual convention of the Kentucky State Association of Master Plumbers at Ashland, Ky.

April 21, 1915.—North Carolina State Association of Master Plumbers, at Rocky Mountain, N. C.

May 11, 12 and 13, 1915.—The National Pipe and Supplies Association, at Buffalo, N. Y., with headquarters at the Lafayette Hotel.

May 12, 1915.—Connecticut State Association of Master Plumbers, at Bridgeport, Conn.

May 18 and 19, 1915.—Pennsylvania State Association of Master Plumbers, at Wilkes-Barre, Pa., with headquarters at Hotel Sterling.

June 1, 2 and 3, 1915—Seventh annual convention of the National District Heating Association, at Chicago, Ill. Headquarters at the Hotel Sherman.

June 28 and 29, 1915—The Master Plumbers' Association of California, at San Francisco.

June 30, July 1 and 2, 1915—The National Association of Master Plumbers, at San Francisco, Cal.

August 9, 10 and 11, 1915.—American Society of Sanitary Engineering, at San Francisco, Cal.

Business Changes

Moline, Ill.—Chas. A. Berglund will soon move his plumbing business into his new building at 1321 Fifth Avenue.

Rock Island, Ill.—The Reddig Plumbing & Heating Co. has moved its business from 1812 Third Avenue to 901 Eleventh Avenue.

Monmouth, Ill.—J. N. Herdman has sold his plumbing business at 70 Public Square to Harry Radmacher and Rolla Johnson. The transfer took place on Monday, February 8th.

Sac City, Ia.—H. W. Klove has purchased the plumbing stock and tools of the W. F. Weary Hardware Co. and is making arrangements to open a plumbing business in his own name.

Reno, Nev.—The plumbing firm of Smith & Woodward, formerly located at 344 Sierra Street, has moved its shop and offices downtown to the H. Thomas Co.'s hardware store at 119 Virginia Street.

Iowa City, Ia.—C. M. Huff, who for a number of years has conducted a plumbing establishment in this city, has taken H. J. Williams into partnership. The new firm will transact business under the name of Huff & Williams and their location will be at 6-8 East College Street.

Norwich, N. Y.—C. H. Latham has sold his hardware, plumbing and heating business to Reynolds, Thompson & Robinson. Mr. Reynolds has been in the employ of Mr. Latham a number of years, while Mr. Thompson was a member of the firm of Matzinger & Thompson. Mr. Robinson recently sold out his interest in the firm of Nash & Robinson.

Rochester, Minn.—R. C. McAndrew has sold his interest in the plumbing and heating concern of Maass & McAndrew Co. to E. Maass, Sr., with whom he has been associated for the past fourteen years. In reorganizing the company the following officers were elected: President, E. Maass, Sr.; vice-president, George Richmond; secretary, E. Maass, Jr.; treasurer, Fred Maass.

New Business Ventures

Shelby, Mich.—R. H. Moore has opened a plumbing business here.

Marion, Ia.—Charles Jacobson and E. L. Cook have formed a partnership under the name of Jacobson & Cook and have opened a plumbing establishment in this city.

Chicago, Ill.—The Catch-Basin Sanitary Co., of this city, has been incorporated with a capital of $1,000, by Rudolph B. Salmon, L. W. Benson and C. W. Stiefel.

Akron, O.—Samuel D. Davis has recently opened a plumbing establishment at 494 Gage Street. He would like to receive catalogues from manufacturers and jobbers of plumbing supplies.

Little Rock, Ark.—The Harrison Plumbing, Tinning & Heating Co. has been incorporated with a capital stock of $10,000. The incorporators are C. V. Caster, J. O. Wilson and J. Clark.

Bartlesville, Tex.—The Union Sheet Metal & Plumbing Co., of this city, has been incorporated with a capital stock of $5,000. The incorporators are C. J. Cottrell, Orin Weaver and J. L. Ench, all of this city.

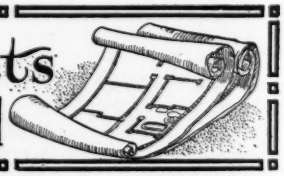
Sheboygan, Wis.—Porter Olsen and Walter Murphy have formed a partnership under the name of Olsen & Murphy and have opened an up-to-date plumbing and heating establishment at 903 Michigan Avenue.

Detroit, Mich.—The Frazer & Puffer Co. has been organized with a capital stock of $5,000, to conduct a plumbing and hardware business. Richard W. Puffer, George W. Frazer and Henry C. Slater are the principal stockholders.

Pittsburgh, Pa.—The Bartley-O'Neill Co. has recently opened headquarters at Penn and Third Streets in this city, for the purpose of carrying on a heating and ventilating contracting business. The company also has a branch in Cumberland, Md., under the name of F. C. Bartley Co. Both Mr. Bartley and Mr. O'Neill were formerly connected with the Bartley-Kennedy Co. of Pittsburgh.

Madison, Wis.—The E. M. Larsen Co., of 203 State Street, has just incorporated its plumbing and heating business with a capital stock of $10,000. The incorporators and officers of the company are: E. M. Larsen, president and manager; S. G. Jordan, vice-president; and E. M. Shealy, secretary and treasurer. Mr. Larsen has conducted a successful heating business for the past two years, and he added a plumbing department about a year ago.

Contracts Awarded



Pittsburgh, Pa.—W. H. Denny has secured the contract for installing plumbing in Mrs. S. R. Sheridan's residence.

Chester, Pa.—Bleyler & Marker have secured the contract for installing plumbing in four new houses now being erected in South Chester, Pa.

Wheeling, W. Va.—The R. W. Kyle Co. has been awarded the contract for installing an up-to-date heating system in the Quarter Savings Bank of Wheeling.

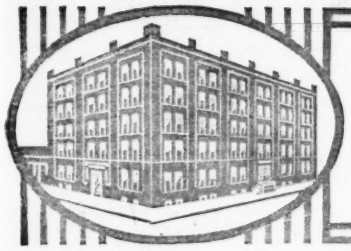
Canton, O.—Monnett & Sacher have awarded the heating contract for a public garage to the Chapman Heating & Plumbing Co. of Canton. Work has been started.

New Kensington, Pa.—Elwood Brothers secured the plumbing contract for the summer residence of Frank Curtis of Grove City, Pa., which is being built near New Kensington.

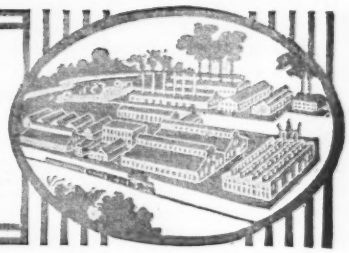
Huntington, W. Va.—The Bockway Plumbing & Heating Co. has been awarded the heating contract in the new residence being erected in that city for G. B. Robertson.

Pittsburgh, Pa.—The Iron City Engineering Co. will do the heating work in the large garage building being erected by the Rosenbaum Department Store Co., in this city.

Davenport, Iowa.—The Ryan Plumbing & Heating Co. has secured the following contracts on which they will begin work in the near future: Plumbing and heating in the Brevoort Hotel, a 75-room structure to be built in Davenport; plumbing and heating in three residences and a 14-flat building to be built in Davenport; plumbing in fifty small dwellings and two club-houses to be built in Cleveland, O.



Among the Wholesalers and Manufacturers



THE NATIONAL PIPE AND SUPPLIES ASSOCIATION ANNOUNCES DATES OF CONVENTION.

The annual convention of the National Pipe and Supplies Association will be held at Buffalo, N. Y., on May 11, 12 and 13, 1915, with headquarters at the Lafayette Hotel, according to official notice just issued by Secretary Geo. D. McIlvaine, 908-909 Oliver Building, Pittsburgh, Pa.

HOELSCHER BROS. OPEN PLUMBING SUPPLY HOUSE.

Herman M. Hoelscher, formerly secretary of the L. Wolff Mfg. Co., of Chicago, has recently formed a partnership with his brother, Edward C. Hoelscher, under the name of Hoelscher Bros. The new firm has opened a plumbing supply house at 1300 West Division Street, Chicago.

THATCHER FURNACE CO. TO MOVE.

The Thatcher Furnace Co., of 110-116 Beekman Street, New York City, will in April remove its main office and warerooms to larger quarters and incidentally follow the up-town trend of the tradé center. The new address will be 131 to 137 West Thirty-fifth Street.

APPOINT SELLING AGENTS FOR SOUTHWEST.

The Keasbey & Mattison Co., of Ambler, Pa., has appointed Howe Bros., of 1198 San Pedro Street, Los Angeles, Cal., as its sales agents for pipe covering for the territory embracing California, south of Fresno; Arizona, New Mexico and Utah. A complete stock will be carried at Los Angeles.

NEW RADIATOR COMPANY IN DETROIT.

The Safford Radiator Corporation, of Detroit, has taken 13,000 sq. ft. in the old Brush automobile plant at Euclid Avenue and the Grand Trunk Railway in that city, and will manufacture a pressed steel radiator. This is a new concern having recently been organized. Mr. Safford, the head of the company, was formerly with the American Radiator Co.

PURCHASED DETROIT BATHTUB & BRASS MFG. CO.'S BUSINESS.

Sam Ginsburg, formerly in the smelting and refining business, has purchased the bathtub and woodworking departments of the defunct Detroit Bathtub & Brass Manufacturing Co. in Detroit, Mich., and will continue the business on a larger scale than in the past. The purchase was made through Theodore Friedeberg and Harry and Samuel Frank, who bought the plant at receiver's sale a few weeks ago.

SUPPLY MEN TO HEAR INTERESTING ADDRESSES.

At the meeting of the Central Supply Association at the Auditorium Hotel, Chicago, February 24th, one of the afternoon addresses will be delivered by Hon. J. B. Vaughn, chairman of the Industrial Board of Illinois, on "The History and Theory of the Present Workmen's Compensation Laws, Coupled with the Obligations and Liability of Employers Thereunder." It is also expected that Judge Post, counsel for the International Harvester Co., will address the meeting on the general subject of the Taxation of Non-Resident Corporations, such as now exists in Michigan, Wisconsin and several other states.

IN CHARGE OF FEDERAL HUBER CO'S. NEW SHOW-ROOM.

George Verity, son of William S. Verity, one of the pioneer master plumbers of Chicago, has recently assumed charge of the show-room of the Federal Huber Co's. new local branch at 34 North Michigan Avenue, Chicago. Mr. Verity resigned from the managership of the promotional and show-room department of the L. Wolff Mfg. Co., at 111 North Dearborn Street. O. J. Buckley of the Wolff concern has succeeded to the office formerly occupied by Mr. Verity.

DEATH OF CARL S. PARKER.

Carl S. Parker, president and general manager of the Tay Co., of Los Angeles, Cal., committed suicide at his home in that city on Wednesday night, February 10th, while temporarily insane. Mr. Parker was in his 38th year and he had a large circle of friends throughout the country to whom the news of his untimely death will be a cause of grief. He had worked tremendously hard lately and had been greatly worried over some bills that were very difficult to collect. His friends believe that this strain unbalanced his mind. His wife and three children survive him.

THE TENTH ANNIVERSARY DINNER OF THE NEW ENGLAND SANITARY CLUB.

The closing of the tenth year of the existence of the New England Sanitary Club, an organization composed of jobbers of plumbing supplies, was celebrated with a dinner held at Young's Hotel, Boston, on the evening of February 1.

Although the dinner was the chief feature of the evening, there were several speeches on timely subjects and a cabaret show to add to the pleasure of the occasion.

The presiding officer was R. D. A. Thompson, of the Thompson-Durkee Co., and after he had discussed trade conditions and the opportunities for general betterment of relations between manufacturer and jobber by means

of co-operation, he introduced Oscar J. Saxe, of the Dalton-Ingersoll Mfg. Co., and Francis J. Torrance, vice-president of the Standard Sanitary Mfg. Co., of Pittsburgh, as well as other speakers. Mr. Saxe gave a talk on "The Cost of Doing Business," while Mr. Torrance's remarks were more in the nature of congratulations on the success of the organization. An amusing address was made by H. W. Thorndike, of the F. W. Webb Mfg. Co., who gave his idea of what the association would be ten years hence.

The cabaret was produced under the direction of an entertainment committee headed by Jesse Baker. Each guest received as a souvenir a humidor presented by the Lenox Co., of Trenton, N. J. The affair was a decided success from every point of view.

Among those present were H. W. Thorndike, of F. W. Webb Mfg. Co.; Oscar J. Saxe, Dalton-Ingersoll Mfg. Co.; Francis J. Torrance, of the Standard Sanitary Mfg. Co., Pittsburgh; Frank J. Locke, Locke, Stevens & Co., George Phillips, Sr., George Phillips, Jr. and Herbert Nickerson, of the Phillips Lead & Supply Co., Providence; Walter Eddy, of L. A. Tillinghast Co., Providence; G. W. Uhler, of A. M. Byers Co., Boston; F. G. Allison, of Braman Dow Co., Boston; Albert Emery, of the Hamilton Emery Co., Boston; Wallace Hubbard, F. W. Hubbard Co., Boston; Messrs. Wales and Shurtlef, of Brown & Wales; Jesse Y. Baker, of W. A. Gallison Co., Boston; P. J. O'Brien and Joseph Devereux, of the James Barrett Mfg. Co., Boston; Messrs. Pierce and Perry, of the George E. Gilchrist Co., Boston; Frank Linnehan, L. Bourneuf Co., Lynn, and Messrs. Hammer and O'Brien, of the same company; Edward F. Butler, of E. F. Butler Co., Boston; Herbert Kay, of Locke, Stevens & Co., Boston; J. H. Young, of J. H. Young Co., Boston; Mr. Woodbury, of Dalton-Ingersoll Mfg. Co.; Mr. Thayer, F. W. Webb Mfg. Co.; J. M. Goodwin, Portland, Me., and D. P. Sullivan, Jr.

ANNUAL SALES CONVENTION OF THE INTERNATIONAL HEATER CO.

The annual convention of the salesmen of the International Heater Co. was held at the home office in Utica, N. Y., beginning Tuesday, February 9th, and closing Thursday, February 11th. The convention opened Tuesday with a business session at the office, followed by an adjournment to the sample floor, to study the samples of new goods which the company will place on the market this season.

In the afternoon, another business session was held, followed by a trip through the warehouse and mounting floor. In the evening a smoker and buffet lunch were held in the English room at the Hotel Utica, followed by interesting papers and discussions.

On Wednesday similar sessions were held, with a trip through the plant in charge of the superintendents and foremen of the manufacturing departments, and on Wednesday evening, a banquet was held at the Yahnundasis Golf Club, New Hartford, attended by seventy-one employees and invited guests.

One of the interesting features of the occasion was the awarding of the service pins for continued service. The following were the recipients this year:

L. J. Brien	20 yrs.	Miss B. C. Harwood	5 yrs.
J. D. Langlands	20 "	C. F. Malone	5 "
W. G. Jones	15 "	H. A. Chester	5 "
Miss M. J. Beggs	15 "	F. C. Keene	5 "
R. L. Griffith	10 "	L. S. Jones	5 "
Miss A. F. Perdue	10 "		

One of the interesting features in connection with the awarding of service pins from the company were the following facts brought out by the president:

Thirty-eight service pins representing five years or over have been awarded.

The total years represented by these thirty-eight are 567.

Of these, the first fifteen represent a totol of 363 years, with an average of twenty-five years' service.

The first ten represent 283 years' aggregate service with an average of twenty-eight years, and the first seven represent 225 years with an average of thirty-two years' service.

Speeches in serious and humorous veins occupied the evening.

On Thursday another business session was held, and about 10 o'clock the convention adjourned for the year.

Among the notable papers and addresses were the following:

"Why Call On the Architect?" by T. C. E. Hunter.

"The Empress Boiler," a popularly technical description by P. J. Dougherty, heating engineer of the Chicago office.

"The Advantages of Warm Air Heating," by W. B. Barrows, of Syracuse, N. Y.

"Furnace Installation in the West," by J. M. Beech, of Chicago.

"Smokeless Boilers and the Field for Same," by T. J. Cusack, of Chicago.

"Getting the Price," by W. R. Smith.

A particularly forceful paper was presented by J. K. Simpkins, eastern sales manager, on "Salesmanship," while "Cost and Selling Prices" were ably discussed by the treasurer, I. L. Jones.

"The Necessary Red Tape of the Office" was the title of an interesting paper by R. L. Griffith.

These and other papers and the discussions brought out by them will no doubt be of great value to the salesmen in their work.

The following representatives of the International Heater Co., were in attendance:

W. R. Smith, Cleveland, O.; H. A. Simmons, Detroit, Mich.; F. A. Healy, Watertown, N. Y.; W. G. Barrows, Syracuse, N. Y.; A. E. Hirschfelder, Rochester, N. Y.; I. A. McCarthy, Greensboro, N. C.; Geo. W. Newey, Zanesville, O.; L. N. Thomas, Sidney, N. Y.; R. V. Edel, Utica, N. Y.; W. J. Rice, Albany, N. Y.; H. W. Bailey, Buffalo, N. Y.; C. A. Voter, Nashua, N. H.; V. O. Mitchell, Dorchester, Mass.; R. J. Clist, manager New York office; F. J. Kedenburg, Brooklyn, N. Y.; J. F. McGinity, So. Orange, N. J.; A. J. Stewart, Brooklyn, N. Y.; G. W. Petrie, Rome, N. Y.; D. E. McCabe, manager Chicago office; P. J. Dougherty, Chicago; Howard Neal, Chicago; W. W. Taplin, Grand Rapids, Mich.; W. A. Pitt, New York; F. D. Sumner, Danville, Ill.; T. C. E. Hunter, Topeka, Kan.; R. H. McCoy, Monmouth, Ill.; C. F. Malone, Davenport, Ia.; Geo. J. Meyer, Chicago; J. M. Beech, Maywood, Ill.; T. J. Cusack, Chicago; L. J. Brien, Ripon, Wis.

Among the invited guests in attendance were: A. D. Vosburg, Binghamton, N. Y., and J. H. Mahorney, of Memphis, Tenn., who for many years represented the company, and who are now selling "International" heaters in their home cities; P. E. Anderson, representing Farwell, Ozmun, Kirk & Co., of St. Paul, Minn., and Mr. Parker, of Binghamton, N. Y., who is associated with Mr. Vosburg in that city.

THE FEBRUARY MEETING OF THE NEW YORK CHAPTER OF A. S. H. & V. E.

The regular monthly meeting of the New York Chapter of the American Society of Heating and Ventilating Engineers was held on Monday evening, February 15th, at the meeting hall in the Engineering Societies Building, in New York City.

Arthur K. Ohmes opened the evening's discussion by an interesting lecture on "The Measurement of Air Flow." The lecture made such a hit that Mr. Ohmes was asked to put it in the form of a paper to be presented at the next semi-annual meeting of the American Society.

A general talk on the various instruments used in this country and in Germany for the purpose of measuring air flow was given by Mr. Keuffel, of Keuffel & Esser Co., who spoke of anemometers and their limitations. Among the many who took part in the discussion were: Messrs. Carrier, Davis, Baldwin and West, the latter showing how anemometer tests were made at three different points on one apparatus with considerable variation in the results obtained, and pointing out that the results of any superficial tests with this instrument are practically negligible.

The president appointed a committee consisting of Frank P. Chapman, A. K. Ohmes and D. D. Kimball, to co-operate with R. C. Miller in framing suitable ventilation provisions for the building code of New York City.

The entertainment committee which represented the Chapter at the recent annual meeting of the American Society in New York made its report, which was accepted with thanks.

The nominating committee which is composed of J. R. Lyle, chairman; Frank K. Chew, Perry West, G. G. Schmidt and W. H. McKiever, made a preliminary or progressive report.

CONVENTION OF UNITED STATES RADIATOR CORPORATION'S BRANCH MANAGERS.

Plant and branch managers of the United States Radiator Corporation, of Detroit, Mich., held their annual convention at the Hotel Tuller in that city, on February 10th to 13th. Aside from the business sessions there were a number of dinners and a theatre party. Among those who took part in the meetings were: H. T. Cole, W. E. Mosher, E. E. McNair, C. F. Hakes, J. G. Kettle, J. F. McIntire, William M. Foster, C. P. Hackett, George Doll, Jr., W. J. O'Keefe and J. McDougal. The managers who attended the conference were: A. H. Rose, New York; W. H. Thayer, Boston; J. A. Gurney, Pittsburg; E. L. Downe, Detroit; Warren S. Hillis, Chicago; Paul V. Rosier, Omaha; A. H. Joliffe, Kansas City; George W. Barr, Philadelphia; E. A. Stark, of Cleveland; H. J. Warneke, Minneapolis; F. H. Blackmore, Edwardsville, Ill.; J. A. Venable, Geneva, N. Y.; J. F. Geary, West Newton, Pa.; M. H. Stimson, Dunkirk, N. Y., and H. G. Naylor, Paola, Kan. The annual banquet was held Thursday evening, Feb. 11.

OPENS CHICAGO OFFICE.

The Standard Regulator Co., of 90 West Street, New York City, has opened a Chicago office in the Peoples Gas Building. The new branch is under the management of A. E. Atherton.

The Calumet Plumbing & Heating Supply Co. has opened business at 667 West 63rd Street, Chicago.

Edwin T. Davis, proprietor of the New England Plumbing Supply Co., of Springfield, Mass., is sojourning at Palm Beach, Fla.

M. E. Conran, president, of M. E. Conran Co., Brooklyn, N. Y., left for a few weeks of golfing at the Bon Air Hotel, Augusta, Ga.

E. Raysor, representative of Stanley G. Flagg & Co., of Philadelphia, Pa., has just left that city for an extended Southern trip.

R. J. Kingsbury, formerly with the Koalsave Vacuum Valve Co., of New York, has joined the sales force of the New York office of Pierce, Butler & Pierce Mfg. Corporation.

William Ritchie, secretary of Boynton Furnace Co., New York, is leaving this week on an extended trip through the West to visit jobbing centers and the Boynton branches.

Frank P. Dey, coast-to-coast representative of M. P. Berglas Mfg. Co., of Brooklyn, is on his semi-annual Pacific Coast trip and reports a general improvement in business in that territory.

Sam S. Glauber, of S. S. Glauber Co., Inc., New York City, is on an indefinite Southern visit. When last heard of he was in El Paso. Mrs. Glauber will shortly join him on a coast and exposition trip.

George W. Collins, treasurer of C. F. Church Mfg. Co., of Holyoke, Mass., was in New York City this week calling on friends in the trade and spending a day at the Eastern Supply Association meeting.

James M. Stannard, president of the Stannard Power Equipment Co., and Edmund F. Capron, of Lewis & Capron Co., both of Chicago, left this week for a two weeks' vacation on the east coast of Florida.

A. H. Warner, of the Detroit Brass Works, Detroit, Mich., greeted our scribe in Lancaster, Pa., last week. Mr. Warner calls on the jobbers in those parts and he reported business exceedingly good with him.

E. W. Craighead has recently severed his connection with the Richmond Radiator Co.'s branch at Columbus, O., and has joined the selling force of L. Wolff Mfg. Co., Chicago, with headquarters at Indianapolis, Ind.

Frederick C. Allen has recently been promoted to the sales department of the Trenton Potteries Co., and will cover New Jersey territory. He was formerly in the company's show room at its home office in Trenton, N. J.

Theodore Ahrens, president of the Standard Sanitary Mfg. Co., of Pittsburgh, and of the Ahrens & Ott Mfg. Co., of Louisville, Ky., and Samuel H. Moon, general manager of the latter company, were in Chicago last Saturday.

Frederick W. Broatch, Eastern representative of the United States Sanitary Mfg. Co., of Pittsburgh, Pa., was encountered by a representative of "Domestic Engineering" in Washington, D. C., last week. He spoke encouragingly regarding the business outlook in the East.

Frank F. Myers, of the Hays Manufacturing Co., Erie, Pa., was encountered by a representative of "Domestic Engineering" while calling on the trade in Pittsburgh this week. Frank has just returned from a trip through

New England and New York State and reports business good and the outlook for spring and summer business exceptionally bright.

George L. Bond, for several years city salesman of the Boston branch of Pierce, Butler & Pierce Mfg. Co., has been put in charge of the boiler and radiator department at the company's branch in Worcester, Mass. Mr. Bond is well known in the New England territory and has a great many friends in the trade.

Most anyone would enjoy taking an outing in company with the following gentlemen: Tim Norton, Cy Long, and Bill Bryar, of the Bailey-Farrell Mfg. Co.; Dick Harte, of H. Mueller Mfg. Co.; Abe Stetz, of W. N. Sauer & Co.; Fatty Choffin, of Johnson Service Co.; Tubby Hecht, of Sturtevant Blower Co.; Gregory McHaffey, of Ruud Mfg. Co.; Slats Gordon, of Ohio Brass Mfg. Co.; B. S. Buford, of American Radiator Co.; Tillie Nash, of Pittsburgh Water Heater Co.; Buck Price, of American Foundry Co., and Paul Schlenemtzhouserberger. On Saturday, February 13th, this notable assemblage of men of the trade chartered a train to convey them from Pittsburgh to Stuebenville, O., where W. A. Helms, a local master plumber, received them with a fleet of automobiles and conveyed them to the oil wells of their holding. The boys are telling some very wonderful stories about oil and oil wells. The above list of names comprise the principal holders of stock in the Rose of The Abby Oil Co., and have been here reproduced just as they appear on "Henry's German Kitchen" register.

A CURB-COCK THAT STOOD THE RACKET.

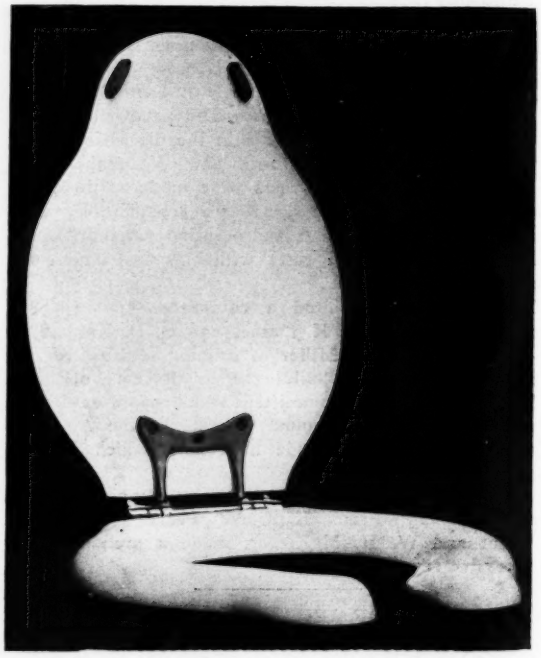
The damage to the curb-cock shown herewith was done by a road roller which weighed several tons, and it happened at Scituate, Mass. This cock had been installed there in a curb box with a sliding standpipe. The big roller passed over the top of the box, pressing

A Curb-Cock That Stood the Racket.

the standpipe downward with such force that the shut-off rod attached to the key of the cock forced the key 3/8 of an inch through the body of the cock. It will be seen that the body of the cock was badly bent and twisted as the result of this unusual experience but no leak occurred in the body, or at any of the points showing use. This cock was made by the H. Mueller Mfg. Co., of Decatur, Ill. In commenting on this, the manufacturers state that "the high per cent of copper which is used in Mueller goods gives them great strength. A cock with a less percentage of copper, being more brittle, would undoubtedly have broken by reason of this tremendous pressure, but it takes something more than a steam road roller weighing several tons to put a Mueller curb-cock out of business completely."

THE "GENUINE PYRALIN" CLOSET SEAT.

The "Genuine Pyralin" closet seat for extended lip bowl, shown herewith, is a good sample of the interesting line of bath-room supplies made by the C. F. Church



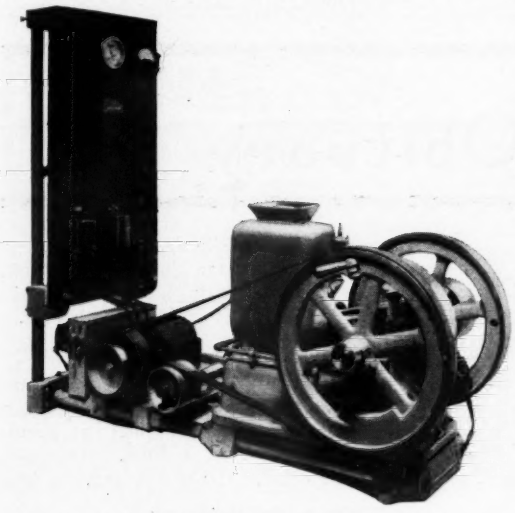
The "Genuine Pyralin" Closet Seat for Extended Lip Bowl.

Mfg. Co., of Holyoke, Mass. The conspicuous feature about all the products made by this company, is the manner in which they are finished, being covered with Pyralin, a pure white substance which is applied in sheet form by the company's patented process. It is not an enamel coating and will not crack, chip or turn yellow with time. It is impervious to natural heat and cold, and is a non-conductor, which makes it agreeable both in hot and cold weather. Interested parties can obtain full particulars from the above company on request, mentioning "Domestic Engineering."

PRIVATE ELECTRIC LIGHTING PLANTS.

A great wave is sweeping over the country for the installation of private lighting plants, and the question naturally comes up: What class of trade should handle their installation? The Kewanee electric lighting system, one of the Kewanee Private Utilities, is handled almost exclusively by plumbers, because experience has proved that the plumbing trade is the best equipped to take care of this business. The installation of a Kewanee plant requires no technical knowledge. The running of wires is simple, and the system is put together carefully at the factory so that its installation only needs the attaching of a few wires, a work which any plumber or fitter can easily do, and it is ready to run. When the Kewanee elec-

tric plant is sold along with the Kewanee water supply system, then both can be run by the same engine, for the Kewanee extended base allows all of the work of the house to be done by the same engine, and there is no need of running troublesome line shafting. We believe it would pay plumbers to do more scouting for private

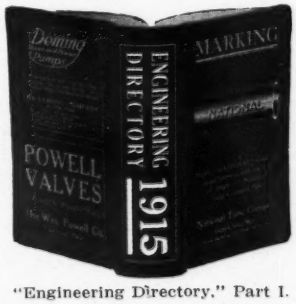


A "Kewanee" Electric Lighting Plant.

electric plant business, and would advise them to get a copy of Bulletin L. on this subject from the Kewanee Private Utilities Co., Kewanee, Ill. There is an opportunity for big business since the idea appeals to the farmer and the cost is reasonable.

THE ENGINEERING DIRECTORY FOR 1915.

The Engineering Directory for 1915, published by the Crawford Publishing Co., of 537 Dearborn Street, Chicago, has just been issued. This is the twenty-second year of publication. In previous years it was published complete in one volume. The 1915 edition is divided in such a way that the selling, or mailing lists are contained in Part 1, while the buyers' section, or classified directory of manufacturers, is in Part 2. Those who are interested in the selling section only, can purchase Part 1 at the regular price of $5. Both parts together cost $6, prepaid. The 1914 edition of Part 1 contained lists of dealers and jobbers of mill, steam, mine and machinery supplies, and the jobbers of plumbing and heating supplies, classified by states and cities, giving names of officers and buyers, and specifying the kinds of goods handled by each, with other detailed information; also well compiled mailing lists of jobbers of hardware; manufacturers' agents; manufacturers of engineering goods, mill supplies and machinery; architects; waterworks; gas companies; purchasing agents of steam railroads and cement mills. These lists are all included in the 1915 edition. In addition there are new lists of cotton and woolen mills; flour mills; sugar mills; lumber manufacturers; woodworking plants; paper and pulp mills; cotton gins and compressors; fertilizer mills and manufacturers of automobiles; agricultural implements; stoves and ranges, and boots and shoes. These new lists were all selected with a view to giving manufacturers of supplies, tools and machinery, mailing lists which would enlarge their field of opportunity. It contains 893 pages, 4x6¾ inches, leather bound. Part 2 is essentially a buyers' hand book. It contains a classified directory of the manufacturers of mill, steam, mine, contractors' plumbing, heating, lighting and allied lines of supplies and machinery. The names of manufacturers are classified under approximately 4,000 headings, with trade names of goods given in alphabetical order. The book also contains an alphabetical list of these manufacturers giving street addresses and specifying the kind, or principal products manufactured. A 20-page cross index simplifies the matter of locating any particular line or specialty, a feature which facilitates the location of the manufacturer when only the trade name of goods is known. It contains 468 pages, 8x10¾ inches, cloth bound. The books can be obtained from "Domestic Engineering" at the price quoted.



"Engineering Directory," Part I.

PUBLIC COMFORT STATIONS.

Work has been started at Pittsburgh, Pa., on the first large public comfort station ever constructed there. It is planned to erect two stations at once, one under the pavement in front of the Federal Building in Smithfield Street, between Third and Fourth Avenues, and another at Fifth Avenue and Liberty Street. Both stations will be underground. Construction of the station in front of the Federal Building has just been started. Some difficulty has arisen over the construction of the station proposed at Fifth and Liberty, on account of the street surface cars rounding that corner.

The Metal Market

Foreign Business Predominates.

Domestic buying of steel products was on a smaller scale last week although shipyards placed additional contracts for 12,000 tons of plates, shapes and forgings, and other contracts are pending for about 25,000 tons including 17,000 tons for the battleship California. The railroads have ordered 44,000 tons of rails, 273 cars and 14 locomotives. Prices are firm, the mills are operating 55 per cent of capacity and gaining steadily. Exports of steel are assuming more proportions. Russia and Great Britain are buying shrapnel and France 15,000 tons of wire products. Actual orders from Italy, France and Great Britain for foundry and low phosphorus iron were placed last week to the extent of about 10,000 tons. There are inquiries also from Japan and if freight rates were more reasonable a large export trade would develop. Buying of pig iron for domestic consumption was in small proportions, actual sales being only about 30,000 tons. Competition between Northern and Southern interests in neutral markets is likely to result in lower prices upon any indication of actual buying as the Southern market is still depressed on account of heavy stocks.

However, the feeling in the trade is more optimistic and evidence is noted that melt is increasing but prices are not moving upward and requirements for the third quarter are being booked at bottom. Quotations are as follows:

No. 1 Northern Foundry, New York	$14.50 to $15.00
No. 2X Northern Foundry, New York	14.25 to 14.50
No. 2 Southern Foundry, Birmingham	9.25 to 9.75
No. 2 Southern Foundry, Cincinnati	12.25 to 13.00
No. 2 Northern Foundry, Chicago	13.00 to 13.25

Less Activity in Copper.

The demand for copper showed a marked falling off but quotations established by the producers at 14¾ cents were well maintained. Germany's threat on British shipping has affected new orders for export and it is thought a curtailment of the export movement will be reflected in copper prices. Ammunition makers have made such large demands for Lake that some of the producers have sold their entire output. Special brands have sold as high as 15¼ cents and this has had a tendency to keep electrolytic on its high basis.

Tin.

Tin was unsettled and irregular in the domestic market with weakness evident in nearby positions while future positions were somewhat firmer. Trading was spasmodic with some disposition to sell. Spot tin sold as low as 35¾ cents, the market closing at 36¼ cents. The supply is apparently sufficient for current requirements and consumers are pursuing the policy of buying from hand to mouth. The total receipts since February 1st were 1,360 tons.

Lead.

The market in lead was quiet and easier. Spot is quoted at 3.80 cents New York, and 3.62½ cents at East St. Louis.

Spelter.

Spelter was strong and higher, there being a good demand for export. Prices for spot were quoted at 8.25 cents in New York, and 8.20 cents in East St. Louis.

Old Metals.

New York dealers' buying prices are all nominal as follows:

Strictly crucible copper	$11.75 to $12.00
Light copper	10.25 to 10.50
Uncrucibled heavy copper	11.25 to 11.50
Uncrucibled copper wire	11.25 to 11.50
No. 1 machine composition	10.00 to 10.25
Heavy brass	8.00 to 8.25
New brass clippings	9.25 to 9.50
Cocks and faucets	8.75 to 9.00
Light brass	6.75 to 7.00
Solder joints	7.00 to 7.25
Heavy lead	3.25 to 3.30
Tea lead	2.90 to 3.00

CAUSES OF EXPLOSIONS IN SEWERS.

The Bureau of Mines is co-operating with the city of Pittsburgh, Pa., in order to determine the causes of explosions in sewers. Special methods and apparatus have been devised to sample and test the air and many samples of sewer air have been examined. Gasoline has been introduced into sewers with special precautions to prevent accidents, and the amounts of different kinds of gasoline necessary to produce explosive mixtures under different conditions have been determined. Studies are also being made regarding the intrusions of natural gas, artificial gas, washings from garages, residues from cleaning plants, etc. All possible sources of ignition are being studied. A report of the investigations will be published as soon as sufficient data have been obtained. The work is under the supervision of G. A. Burrell, chief gas chemist of the Bureau of Mines, and H. T. Boyd, chemist of the City of Pittsburgh, with the collaboration of other members of the staff of the Bureau of Mines and the Public Safety Department of the City of Pittsburgh.

William Quigley.

William Quigley, a pioneer master plumber of Detroit, Mich., died at his home in that city on Thursday, February 11th, from a stroke of paralysis, in his 66th year.

Hugh Carlile.

Hugh Carlile, a well-known master plumber, of Fernie, B. C., died January 19th. For the past seven years Mr. Carlile was engaged in the plumbing business at Fernie and also operated a branch office at Elko. He was a member of the Masonic order. His widow survives him.

John A. Strickrath.

John A. Strickrath, who conducted a successful plumbing business at 312 Sixth Avenue, McKeesport, Pa., died at his home in that city on Sunday, February 14th. He was a member of the Master Plumbers' Association of Pittsburgh and Vicinity and was well known in the trade in Western Pennsylvania.

H. L. Munroe.

H. L. Munroe, senior member of the Munroe & Haskell Hardware & Plumbing Co., 1163 Elk Street, Bellingham, Wash., died at his home in that city on January 23d. Mr. Munroe had resided in Bellingham for the past twenty-five years and was one of the most prominent plumbers of the Puget Sound country. He was a member of the local Master Plumbers' Association and a member of the Nile Temple Shriners of Seattle.

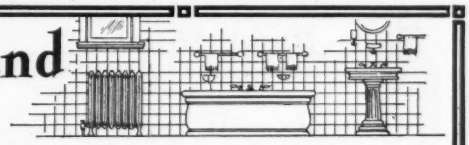
Timothy M. McCarthy.

Timothy M. McCarthy, a well-known master plumber of Hartford, Conn., died at his home in that city on Thursday evening, February 4th, after a brief illness. Mr. McCarthy was in his fifty-seventh year and lived all his life in Hartford, having been born in that city. He was engaged in the plumbing business at 185 Main Street and was a member of the Hartford Master Plumbers' Association. His widow and two daughters survive him.

George W. Oby.

George W. Oby, member of the plumbing firm of Smith & Oby, in Cleveland, O., died at his home in that city, on Sunday, February 7th, following a short illness of pneumonia. Mr. Oby was a sailor in his youth and was a certified captain on the Great Lakes at the age of 18. Later he established the plumbing business of Oby & Co., in Canton, O., in which enterprise he was associated with A. C. Eynon. At the time of his death, which occurred in his 75th year, he was a member of the firm of Smith & Oby. His burial took place on Tuesday, February 9th, from his late residence in Cleveland, and A. C. Eynon was one of the pall bearers. Mr. Oby is survived by his wife, a son and a daughter.

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

On April 30th of this year, the major part of the different agreements between the unions of the building trades and their employers will expire. Resolutions have been adopted by the Building Construction Employers' Association, objecting to any new increase in the wage scale or to conditions that will tend to increase the cost of building construction. The Chicago Master Plumbers' Association has recently signed separate agreements with the journeymen plumbers and the journeymen gasfitters for another three years at the same scale.

The joint committee from the Chicago Master Plumbers' Association and the Journeymen Plumbers' Association, recently waited upon Mayor Harrison, to protest against the move to place the Board of Plumbing Examiners on a per diem basis, the plan being to recompense them so much per day for the time actually put in. This idea grew out of the recommendations of the Efficiency Committee in a recent report to the city council. The committee of master plumbers and journeymen who called on the mayor, explained that the Board of Plumbing Examiners, was a self-supporting body, and that the recommendations if accepted, would obstruct the excellent work which has been done by the board in recent years. Mayor Harrison promises to veto the proposition to reduce the compensation of members of the board. Hence their salaries will remain as heretofore—about the same as received by a plumbing inspector.

William H. Hays, of 5810 West Chicago Avenue, has recently been awarded the contract for installing the plumbing fixtures in a two-story flat building to be constructed at 5029 Fulton Avenue.

The plumbing contract for a nine-family apartment building to be erected at 4905-4911 Hutchinson Avenue, has been awarded to Morris B. Mason, of 3004 West 12th Street.

A. Mourant, of 3803 West Chicago Avenue, will install the plumbing fixtures in a six-family apartment house to be built at 6923 East End Avenue. The heating plant will be installed by the Robinson Furnace Co., 205 West Lake Street.

The plumbing fixtures for a municipal natatorium building which will embrace a city pumping station, will be installed by C. J. Herbert & Sons Co., 444 South Dearborn Street. Peter S. Olson, of 153 West Randolph Street, will do the heating work in the building.

P. Nacey, of 927 South State Street, has recently been awarded the contract for installing the plumbing fixtures in a fire engine house at 11033 Homewood Avenue, Morgan Park. The heating plant will be installed by William Maloney, of 5434 South Halsted Street.

The heating system for a three-flat apartment house, to be built at Albany and Ainslie Avenues, will be installed by the Robinson Furnace Co., while Riordan Bros., of 5042 West Madison Street, will do the plumbing work.

E. C. Wagner, of 2753 Fullerton Avenue, has been awarded the contract for installing the plumbing in a two-family apartment house to be built at 2657 Berlin Street.

The plumbing fixtures for a large apartment building to be erected at 6142 South Rockwell Street, will be installed by E. Stevenson, of 5808 Ashland Avenue.

Frank J. Ruh, of 2771 Lincoln Avenue, has recently been awarded the contract for installing the plumbing fixtures in a theater (seating capacity 597), to be erected at Lincoln Avenue near Diversey Parkway. One store and three offices in the building will also be equipped with plumbing fixtures by Mr. Ruh.

Greenberg & Levinson, 3012 West 12th Street, will install the heating system in a nine-family apartment building at 4905-11 Hutchinson Avenue.

The heating plant for a large flat building, to be erected at 6142 S. Rockwell Street, will be installed by E. Stevenson, of 5808 Ashland Avenue.

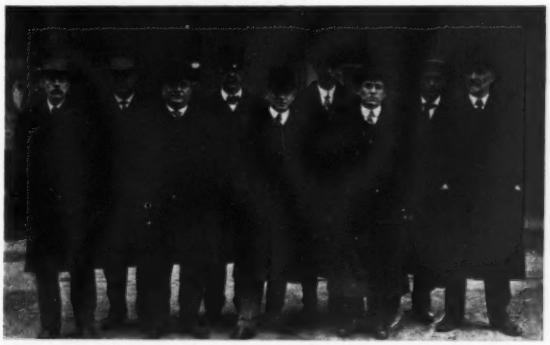
Albert F. Ward, of Chicago, a grandson of Wm. E. Goodman, of Milwaukee, Wis., former treasurer of the National Association of Master Plumbers, may soon secure an appointment as cadet at the United States Military Academy, at West Point, N. Y. Congressman Fred A. Britten, of Illinois, has recently forwarded the name of the young man to the war department.

From master plumber to farmer—that is the step taken by Henry Matchen who until recently conducted a plumbing business at 5027 Lincoln Avenue, Chicago. He has retired from the business, and has moved to Mason, Bayfield County, Wis., where he has acquired 480 acres of farm land. He has the best wishes of his friends in his new activity.

Ohio

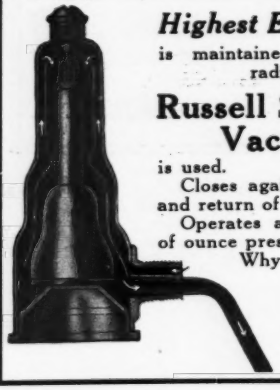
Cincinnati and Vicinity.

The good-sized Cincinnati delegation which attended the meeting of the Ohio Master Plumbers' Association last week in Akron returned home much pleased with the convention and with the share of honors landed by them



Toledo Master Plumbers Attending the Recent Ohio Convention in Akron.

in the redistribution of offices and committee appointments. The election of John J. Vogelpohl as state vice-president and delegate to the national convention was especially pleasing to the local delegation, as Mr. Vogelpohl is a former president of the Cincinnati organiza-



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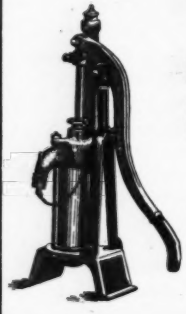

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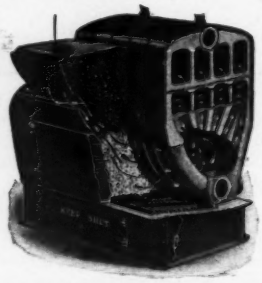

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tion, and is one of the most popular members of the trade. The spirit of confidence and optimism which was in evidence at the gathering is reflected in the sentiments expressed by the Cincinnati men, who are preparing for an active season, the more so in view of the fact that last year's building was, for various reasons, much below the volume expected.

Prospects for an active season among the building trades are growing constantly brighter, as one project and another, laid on the shelf during the past year or so on account of labor and financial conditions, comes to life. Several large apartments houses are projected, as well as the court house, the new Duttenhofer building at Sixth and Sycamore Streets and two Y. M. C. A. buildings. J. S. Glassmeyer has about completed the excavation on an apartment building at Reading Road and Avondale Avenue, which, it is understood, will cost in the vicinity of $125,000 and will contain eighteen apartments of six and seven rooms each. J. M. Jackson is interested in the project and J. Stanton Robinson is the architect.

Cincinnati plumbers and heating men have their eyes on several good-sized Dayton jobs which are projected for the near future; one of these which developed lately being the proposed $20,000 home of the Dayton Bicycle Club, to be built adjoining the new Miami Hotel. Louis Lott, of Dayton, prepared plans for the building, which is to be equipped with showers as well as the usual toilet facilities, and it is expected that bids will be called for shortly.

James and Irvin Laile, who have been engaged in a general plumbing business at 2757 Observatory Avenue, Hyde Park, under the firm name of Laile Brothers, have filed a voluntary petition in bankruptcy in the United States District Court. Liabilities are fixed at $1,794, while the assets are valued at $343.79.

Harry Niemes has been awarded the contract for the steam heating in the new clubhouse of the Western Hills Country Club, to be built at the intersection of Warsaw Avenue and the Cleves Pike, under plans by Architects Samuel Hannaford & Sons. All of the contracts except carpentry and plumbing have been let, and these will be let shortly. The building will cost about $30,000.

A large number of contractors, of Findlay, O., are preparing to submit bids on the plumbing, wiring and general construction for the Findlay School building to cost approximately $300,000.

Bids are being received on the general construction as well as the plumbing, heating and ventilating for a school building in Fostoria, O., to cost in the neighborhood of $150,000.

The board of education of Austintown, O., near Youngstown, last week awarded the contract for heating and ventilating the West Austintown School to the Bartlett Bros. Co., of Cleveland, on their bid of $4,100.

The stock of the Sunkle Plumbing Co., of Zanesville, O., was sold last week by the trustee in bankruptcy to C. M. Ludman, the price being $1,530. There were fourteen bidders for the stock, Mr. Ludman's figure being the highest. W. E. Bowers, who has been operating the Sunkle shop, recently filed a voluntary petition in bankruptcy, and will probably retire from business.

W. W. Watrous, of the plumbing firm of Saunders & Watrous, Portsmouth, O., appeared recently before the board of health of that city for the purpose of presenting, and urging the passage of, an ordinance providing for a board for the examination and licensing of plumbers. He pointed out the desirability of such an ordinance, which would eliminate incompetents among jour-

neymen and master plumbers alike, and which would prove a measure to protect the health of the city. John T. Walters, of the Walters Plumbing Co., also appeared and argued in favor of such an ordinance. Several members of the board, including the mayor, suggested that the plumbing inspector of the city had ample authority to eliminate the incompetent, and that the city's plumbing ordinance as it stands is sufficiently definite to cover the matter.

Massachusetts

The Master Plumbers' Association of Brockton has taken up the matter of separation of contracts with the city officials. In the past it has been the custom of the public property committee to include plumbing in the general contract for new buildings. The committee has taken the plumbers' protest under advisement.

The question of appointing an inspector of plumbing who is not in business in the city is being agitated in Attleboro. At present Attleboro, which became a city only a few months ago, has two inspectors, both of whom are in the plumbing business in that city.

Cragin & Wilkins Co., of Leominster, has an extensive plumbing contract in the residence of Mrs. C. S. Nightingale, at Jaffrey, N. H. There are to be four complete bathrooms with showers, two toilet rooms, kitchen, laundry and butler's pantry installed and also a bathroom and other plumbing in the stable.

Awards for plumbing and heating in the demonstration houses being erected on Winthrop Street, Salem, by the Salem Rebuilding Trust, have been placed. F. J. Barry secured the plumbing contract and E. J. Rollins the heating contract.

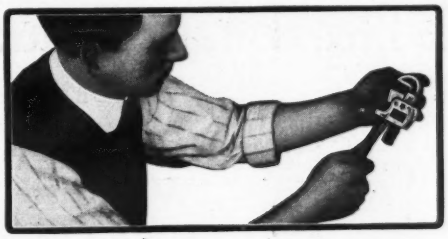
State Secretary James H. Trow narrowly escaped being burned out in a big fire in Salem on Thursday night of last week. A large block containing several stores and a hotel, directly across the street from Mr. Trow's place of business at 4 St. Peter Street, was burned with a loss of a quarter of a million dollars and the flames were so threatening for a time that fire apparatus was called from half a dozen surrounding towns and cities.

Contracts for heating, ventilating and plumbing in the new Holy Family High School at New Bedford have also recently been let. The heating and ventilating contract went to J. N. Conway for $2,200 and the plumbing to Jeremiah Coholan for $2,375. There were a number of bidders for both contracts and the work was given to the lowest bidder. It is planned to have the school ready in time for the graduation exercises in June.

Guy Hall, conducting a plumbing, heating and ventilating business at 115 Western Avenue, Lynn, has made an assignment to Roland D. A. Thompson of Thompson Durkee & Co., dealers in plumbing specialties.

Hammer Bros., who conduct an extensive plumbing business on Railroad Street, Springfield, took their help on a fishing trip a few days ago, closing the store and suspending business for an entire day. The party went to Lake Garfield, in the town of Monterey, and according to reports, practically depopulated the pond of pickerel.

Peter A. Beaton, a master plumber of Belmont, Mass., who filed a petition in bankruptcy the middle of January, has liabilities of $6,593 and assets amounting to $953, according to his schedule.



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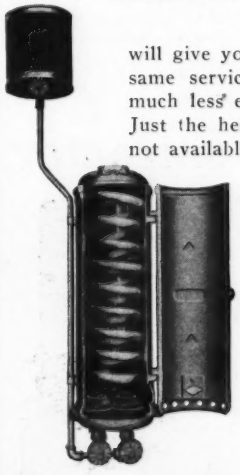

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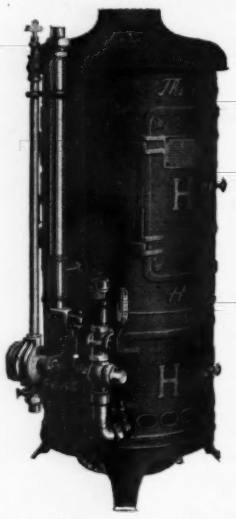

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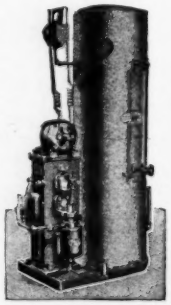

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Pennsylvania

Manufacturers and employers in Pennsylvania are deeply interested in the measure that has just been introduced in the House of Representatives at Harrisburg by Representative Gans, of Philadelphia, concerning workmen's compensation. This bill seeks to create an industrial accident board. Every employe within the state is presumed to have accepted the act. If the act is rejected by the employe, the employe retains common law defense of contributory negligence. The rate of compensation is fixed by the act at 50 per cent within a limit of 300 weeks in ordinary disability. For permanent disability, the limit is 500 weeks and the minimum $4,000. In case of death, $10 per week for 300 weeks is allowed, together with medical and surgical treatment.

Philadelphia and Vincinity.

P. J. Hoft, of 245 South Eighth Street, has been awarded the plumbing contract in the new factory of the Franklin Bindery at the corner of American and Locust Streets. Consideration, $1,500.

B. Landau, of 1216 North Fourth Street, has been awarded the heating and plumbing contracts in the new apartment house at the corner of Broad and Reed Streets, for John Burt. Consideration, $3,000.

Flynn & Love, of 1506 Samson Street, have been awarded the contract to make alterations to the plumbing system in the new building at the corner of Juniper and Market Streets.

H. Lutz & Co., Sixteenth and Summer Streets, have been awarded contract to install the plumbing and heating in the property at 809 Chestnut Street.

Edward P. Stumpf, of Lancaster, has been awarded the contract to install plumbing and heating in the Rothweller apartment house.

Musselman & Schwartz, of Lancaster, have been awarded the contract in the new Y. M. C. A. Building.

P. J. Hoft, 245 South Eighth Street, has been awarded the contract to install a heating system in the Texas Oil Co.'s building, Commercial Avenue and McKean Street. He also has the contract to install heating and plumbing in the building at 2201-2203 Jackson Street, for Edward Trainer.

Thompson Bros. secured the contract to install boilers, etc., in the Mercantile Library Building, at 12 South Tenth Street. Consideration, $2,000.

J. J. Sites, Jr., 2912 Fletcher Street, has the contract to install new plumbing and heating in the property at the corner of Broad and Thompson Streets, for Wm. D. Thompson.

Hiller & Curran, 3818 Lancaster Street, have opened an elaborate establishment and will carry a full line of plumbing and heating supplies. They will be pleased to receive catalogs from the jobbers and manufacturers.

H. T. Campbell, plumbing and heating contractor, of Twenty-ninth and Stiles Streets, Philadelphia, has just completed a fine residence in Lansdowne, Pa., where he will reside during the summer months. Mr. Campbell has a number of plumbing contracts on his books at the present time for residences in Lansdowne.

John Clark of Butler, Pa., is at work on the plumbing contract awarded by McCullough & Alexander of that city, who are erecting a new mercantile building. Mr. Clark has also secured the plumbing work in the large garage being built at Newcastle, Pa., which is being built by T. E. Moorehead.

Kentucky

Louisville and Vicinity.

The Executive Committee of the Kentucky Master Plumbers' Association recently met at Cody's Hotel, Covington, Ky., to decide on the dates and location of the annual convention. It was decided to convene in Ashland, Ky., April 19 to 20. George Schardein, president of the Louisville Association, and Jacob Isaacs, a prominent member of both the state and local associations, represented Louisville at the meeting. Others in attendance were: Charles Whitehead, Frankfort; J. J. O'Neill, Ashland; George Balme, Covington; George Fuller, Covington; W. W. White, Newport; E. C. Kelly, Covington; and W. H. Dahlenburg, Covington.

The Louisville Master Plumbers' Association held a meeting Monday evening, February 1st, at which it was decided to appoint a committee to look after the educational campaign which has been started in the local body. The committee appointed is composed of George Schardein, chairman; J. J. Bosemer and F. H. Scott. This committee will arrange for the speakers at the various meetings. It was also decided to have a typewritten form made up to be sent to all association members, which would enable them to figure costs on each and every plumbing job handled. The form will be so arranged that it will be almost impossible to miss anything in figuring new work and the overhead cost will be brought down to a point where it can be easily handled according to members of the association.

J. W. Oliver, of the Ahrens & Ott Mfg. Co., presided at a meeting of the Rotary Club, held last week at the Watterson Hotel. Following the meeting the Louisville Rotarians took the 1:10 o'clock train to Cincinnati to attend a big "get-together" meeting of Rotarians from Louisville, Indianapolis, Columbus, Cincinnati and other points. Besides Mr. Oliver, who headed the delegation to Cincinnati, A. J. Anderson and F. A. Clegg were in the party, which, including delegations from Paducah and Evansville, Ind., numbered about fifty.

W. H. Matlack was recently awarded a contract for overhauling the entire plumbing system of the Louisville Industrial School. The work will take some time to complete and will run into several hundred dollars. The present fixtures will be used. Mr. Matlack said he was figuring on a lot of new work and that he was surprised at the amount which is in sight. Prospects are far better than they were this time last year.

The Board of Education recently awarded a contract to L. C. Gibson, for the heating plant in a building on Sixth Street, which is being remodeled into a fourteen-room school house for the city. The building was formerly used as a medical college and later as a hopsital while the new city hospital was being erected. The entire cost of remodeling the building is about $27,000.

At a recent meeting of the City Council of Louisville, on recommendation of the Committee on Gas and Water, the lower board passed an ordinance regulating those engaged in the plumbing business in Louisville, as well as journeymen plumbers. This new ordinance is practically the same as that now in force. On motion made by Councilman Edward J. Parker, one section was changed requiring the Board of Examiners of Plumbers to hold examinations within forty-eight hours after the applicant has asked for an examination. Under the present ordinance the board is only required to meet every three months. In

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several minor details the wording of the new ordinance was changed to conform with the new state plumbing law.

F. A. Clegg & Co., of Louisville, were recently awarded a contract for the heating and ventilating installations in a new $75.000 concrete warehouse and manufacturing plant to be erected by the J. F. Kurfees Paint Co. at Floyd and Market Streets. Joseph & Joseph are the architects.

A voluntary petition in bankruptcy was recently filed in the United States District Court by Andrew Jackson Bauer, a plumber at 2226 South Third Street, Louisville. Mr. Bauer listed his liabilities at $896.47 and his assets at $566.10.

Tennessee

The Fisher Heating Co. and Pritchard Bros., of Memphis, Tenn., were respectively awarded the heating and plumbing contracts for the Shop of Culture's new home to be erected on Main and Monroe Streets in Memphis. The building is to be erected by the Carrol-Blake Construction Co., of Birmingham, Ala. The main contract was awarded on a bid of $43,413. Work will start April 1st and is to be completed in August.

The Board of Education, of Chattanooga, Tenn., has awarded a contract for the erection of a school building and installation of plumbing and heating to T. S. Moudy & Co. This company's bid was the lowest of six submitted, according to specifications furnished by J. D. Alsup, architect.

California

San Francisco and Vicinity.

Building continues rather slow, and most of the shops are none too crowded with work. Big work is particularly slack, though there is said to be more in sight for the spring and summer than was to be noted a few weeks ago. All the larger work for the Panama-Pacific Exposition has been completed, and, though some shops are finding a little to do now and then in connection with the installation of exhibits, the bulk of the work directly connected with the fair is over. The prolonged rains and the near approach of the opening date of the exposition have stirred up a good deal of small jobbing and repair work.

The Peterson-James Co. has been awarded the contract for the plumbing, gas-fitting, draining and steam heating for the Peter Windeler Co.'s apartments at Ellis and Jones Streets for $10,472. The contract for the wiring and other electrical work has been awarded to M. A. DeLeu on a bid of $2,400.

The James Pinkerton Co. secured the plumbing contract for the seven-story S. W. Morehard apartments at California and Mason Streets; consideration $7,900. Other contracts on this building which have been let include the heating contract awarded to the Scott Co. for $5,525 and the electric wiring to the General Electric Construction Co. for $4,000.

Wm. P. Goss has secured the sub-contract for the piping, radiators, blast radiation, plenum chamber, sheet metal work, screen and registers as well as the hot water tank for the Chinese Christian Institute in this city. Consideration $2,160.

W. A. and Charles Kingwell have filed notice that they are conducting business under the trade name of the Kingwell California Brass Works.

Another Panama-Pacific Exposition contract was secured this week by Strehlow, Freese & Petersen, who will erect and install fixtures in Public Comfort Station No. 2 on Francisco Street near Octavia.

Los Angeles.

Architects Oliver P. Dennis and Henry Harwood Hewitt, of Los Angeles, have been commissioned by the commissioners of the town of Owensmouth to prepare plans and specifications for a new high school to meet the scholastic needs of nine separate and distinct school districts in the Western San Fernando Valley and in the outlying foothill districts. The building and equipment, exclusive of the site, will cost $100,000, and it will be one of the finest schools in the Southland. It will be known as the Union High School. This new school will occupy a site of six acres and will be of Roman classic style, two stories in height, 230x63 ft. It will contain twelve classrooms, teachers' and principal's offices, rest rooms, library, laboratories, lecture rooms and an auditorium with a seating capacity of 900. The same architects will also prepare plans and specifications for a grammar school for the town of Chatsworth to contain eight classrooms, a library, teacher's room and an auditorium—to cost $35,000. Bonds have been voted for both projects and work is to start at an early date.

Arthur Hess, located in Detwiller Building, is low bidder on the plumbing and sewer work to be installed in the main building of the Fresno State Normal School building, his bid being $39,746. Thos. Haverty Co., Los Angeles Street, is low bidder on the boiler plant equipment at $10,750. The entire building will cost approximately $330,000.

Architect John Frauenfelder has been employed by a syndicate to prepare plans for a new amusement park at Bimini, which will cover eight acres.

H. C. Fryman, the new lessee of the Hayward Hotel, Los Angeles, is to add three more stories to contain sixty rooms with private baths. Plans for the addition are now in the hands of the architects.

Other Cities in the State.

Fred M. King has bought out the interest of his partner, Frank A. Hunt, in the Peerless Plumbing Co. of Madera.

W. A. Boole, of Oakland, has taken over control of the Piedmont Bath. He will double the capacity of the establishment and make a number of improvements. Salt water will be piped from Lake Merritt and a filtration system will be installed. Work is to be completed in the early spring.

Bids have been called for on the heating system for the high school at Hughson.

The plumbing business of C. V. Foresman, of Oceanside, has been sold to W. T. Stein.

The City Trustees at Fowler are in the market for 100 water meters for the water department.

The Western States Porcelain Co. located at Richmond is preparing to add three more kilns to its plant and will manufacture solid porcelain bathtubs.

Copley Bros., who are engaged in the plumbing business at Riverside, have incorporated their business under the same name.

The trustees of the Leland Stanford, Jr., University, San Mateo, have taken over the Bear Gulch Water Works and will develop the property and supply water to Palo Alto, Woodside, Menlo Park and vicinity.

ADAPTABILITY

Where soft water is desired all over the house, there is no pump on the market to compare with the

HARTLEY BRACKET PUMP

to be used in connection with an overhead tank.

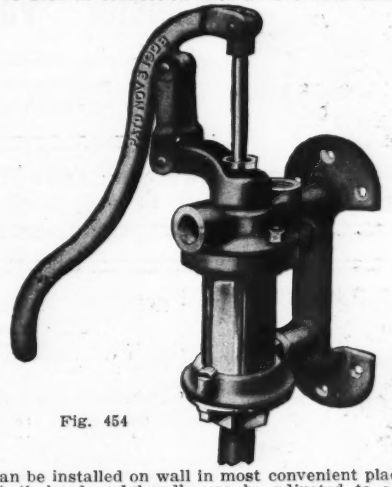

Fig. 454

Can be installed on wall in most convenient place, as both head and handle can be adjusted to any angle.

Insert bibb cock in front opening, and screw pipe in rear opening. To pump water to sink, leave bibb cock open, and close it when pumping into tank.

Write for circulars and prices.

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No Springs

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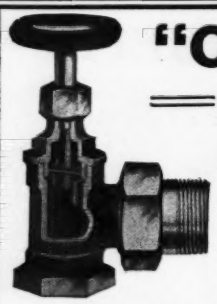

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Easily applied to any steam or vapor heating system—new or old.

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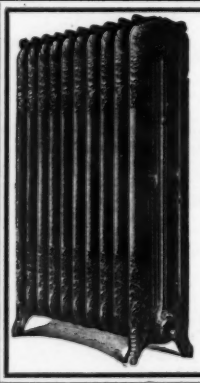

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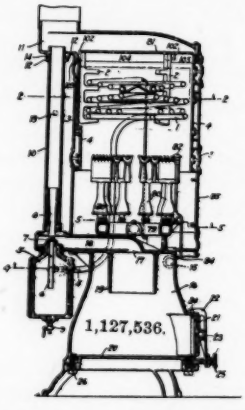
Logansport Radiator Equipment Co.
LOGANSPORT, IND.

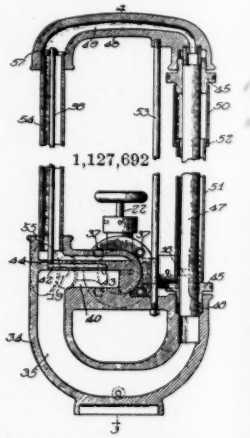
Patents

Heating Department.

1,127,536. Steam-Generator. Joseph M. Stabel, Rochester, N. Y., assignor to Domestic Appliances Co., Rochester, N. Y., a Corporation of New York. A steam generator comprising, in combination, a continuous-flow boiler adapted to discharge through a permanently-open orifice of fixed size, a restricted passage normally of fixed size leading to the boiler, an automatic water-valve, consisting of a pressure-reducing valve adapted to receive water from a source of supply under variable pressure and to discharge it through said restricted passage into the boiler at a uniform, reduced pressure, heat-producing means for heating the boiler, and means for regulating the heat-producing means adapted to operate automatically to maintain a uniform pressure of steam in the boiler.

1,127,692. Steam-Meter. Jacob M. Spitzglass, Chicago, Ill. In an apparatus for the purpose described, the combination with a steam conduit, of a plug inserted through the shell of the conduit, a static tube connected thereto adapted to be inserted in the steam conduit and comprising a cylindrical member flattened at one end and provided with openings which are disposed in a direction other than to receive the direct impact of the steam as it flows in the steam conduit.

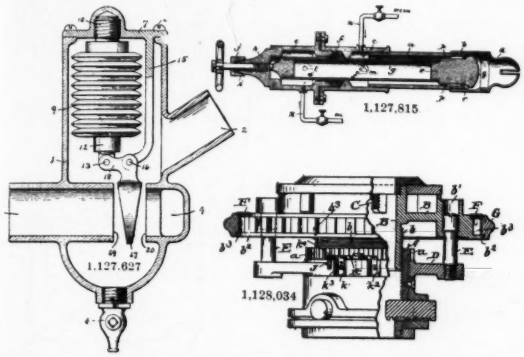




1,127,627. Temperature-Controlled Valve. Chester F. Johnson, Detroit, Mich. In a control valve, the combination of a body having an outlet passage and two inlet passages in line with each other, a disk valve mounted between the inner ends of the passages, means to support the valve, an arm on the valve, a cover for the valve body, and a thermostat within the valve body, consisting of an expansible cylinder, connecting to said arm on said valve and said cover for swinging the valve between said inner ends of the passages as the temperature of the contents of the body changes.

1,127,815. Crude-Oil Burner. Emmerson N. Shaw, San Francisco, Cal. In a burner of the class set forth, the combination of a tubular casing provided at one end with a nozzle and having its other end closed and also provided near its rear end with an interior stuffing box, a tube inclosed within said casing and slidable back and forth through said stuffing box, means for sliding the tube back and forth,

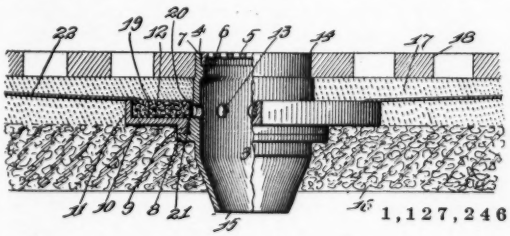
a nozzle valve at the inner end of the tube, said tube being provided with perforations at the rear of the stuffing box and also with a circumferential series of oil outlets at a point just in front of the stuffing box, a steam pipe communicating with the interior of the casing at a point in front of the stuffing box, and an oil pipe communicating with the interior of the casing at a point to the rear of the stuffing box.



1,128,034. Die-Stock. Herman W. Oster, Cleveland, Ohio, assignor to The Oster Manufacturing Co., Cleveland, Ohio, a Corporation of Ohio. In a die stock, the combination of a tubular work holder, a concentric tubular die carrier which is rotatable and movable longitudinally with respect to the work holder, a ring which is rotatable upon the work holder but is incapable of longitudinal movement thereon, means compelling the die carrier and ring to rotate in unison, a ratchet sleeve rotatably mounted upon the die carrier, a ratchet connection between said sleeve and die carrier, a spring pawl mounted on the ring, there being ratchet teeth on that part of the work holder which is adjacent to said ring with which said spring pawl may be engaged, and means for holding said spring pawl out of engagement with said ratchet teeth.

Plumbing Department.

1,127,246. Drain. Joseph Hirshstein, St. Louis, Mo. In drains of the class described the combination of a casting, a detachable flanged shield mounted thereon and approximately centrally located, said casting having a plurality of apertures formed in its wall and on a level with the inner surface of the shield; a grill detachably located in the casting, said casting and shield being em-

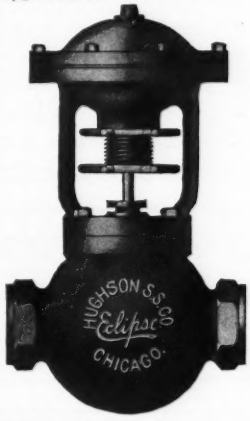


bedded in the floor; the said grill being flush with the floor line and a ring of porous material located in the shield covering the apertures for permitting any seepage passing down between the wall of the casting and the floor material to escape into and pass out by way of said casting, substantially as specified.

1,127,510. Drain-Trap. Herman A. Poppenhusen, Evanston, Ill. A drain trap, comprising an outer receptacle provided with a discharge opening in the side wall thereof, an inner receptacle located within and resting upon the bottom wall of said outer receptacle and there being a space

Eclipse The Ideal Valve for Regulating Gas or Air

Also used for water on the small sizes up to 2½ inches.



A particular feature of this valve is the hollow stem from disc to diaphragm through which air or water passes.

When pressure overcomes tension of spring at top of diaphragm, disc seats and remains seated until pressure goes down when spring raises disc and permits further flow of air or water. Write for Catalog "D."

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—the ONLY preparation made exclusively for keeping all parts of closet bowls white, sanitary and odorless and the ONLY one that does the work exactly right. Saves labor. No scouring or scrubbing needed.

SANI-FLUSH dissolves all crust and deposit from bowl and trap, without injuring them.

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"BUCKEYE" DIE STOCKS
"Easy Cutters" for pipe 1-2 inch in diameter and larger
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For all pipe from 1-8 to 4 inches
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For a closet seat with great strength and extra long life, recommend and install the
UNION GUARANTEED SEAT
It bears the Union Gold and Blue Label—look for it.
M. P. BERGLAS MFG. CO., Fulton and Furman Streets., BROOKLYN, N. Y.

Presto PRESSED METAL RADIATORS
Made in America — Pittsburgh, U. S. A.
One-third the weight of other types of equal heating capacity. Easier to handle—save labor expense. Provide quick, uniform, inexpensive heat. Ask for Catalog "T."

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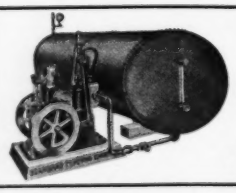
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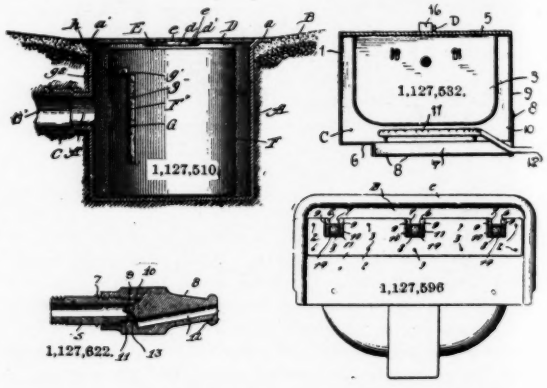
formed between the side walls of said receptacles, said inner receptacle being provided with an inlet opening at its top and a discharge opening in its side wall; the discharge opening of said outer receptacle being located below the inlet opening of said inner receptacle, a removable cover plate extending over the top of said outer receptacle and being out of contact with said inner receptacle, said cover plate being of a size to permit the removal of said inner receptacle from said outer receptacle and provided with an inlet opening communicating with the inlet opening of said inner receptacle, and a baffle plate located within and secured to the side wall of said inner receptacle and extending over and spaced from the discharge opening in the side wall thereof; said baffle plate having its lower end terminating below the discharge opening of said receptacle.



1,127,532. Water-Heater. Jacob Sklar, Philadelphia, Pa. A device of the character described comprising a hollow body, a container supported thereby and positioned therein, the opposed walls of the body and container being in spaced relation to afford a heating chamber, the bottom wall of the body having one extremity provided with a longitudinally disposed depression provided with perforations, an end wall of the body being provided with an opening in communication with the depression, and a door for closing said opening.

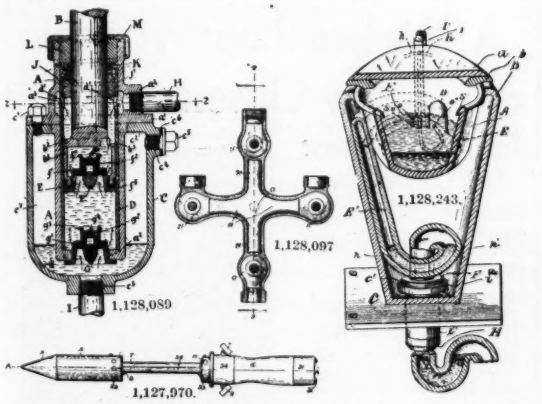
1,127,622. Valve for Waste Pipes or Tubes. Otto G. Hitchcock, Erie, Pa., assignor to Hays Manufacturing Co., Erie, Pa., a corporation of Pennsylvania. In a device of the class described, a waste pipe or tube, a nozzle in adjustable engagement therewith and formed with an internal annular chamber surrounding the end of said waste pipe or tube, said nozzle having a straight bore extending diagonally therethrough and communicating at its inner end with said annular chamber, and a valve and valve seat in said nozzle and pipe or tube, whereby the unseating of said valve from its seat will afford communication from said pipe or tube to said annular chamber and said diagonal bore.

1,127,596. Anchorage or Support for Lavatories or Similar Articles. John H. Crabiel, Pennington, N. J., assignor to The J. L. Mott Iron Works, New York, N. Y., a corporation of New York. A device of the character described comprising a supporting member adapted to be secured to a support, said member having a recess in its rear face opening through an edge of said member, a slot through said member into said recess and having an end opening through said edge of said member, a fastening plate movable in said recess in one direction relative to said slot, and having an opening registering with said slot and a fastening bolt movable laterally in said plate opening and transversely of said slot, and movable with the said fastening

plate in a direction crossing its first mentioned movement.

1,128,089. Differential Pump. John Astrom, Fort Wayne, Ind., assignor to Fort Wayne Engineering & Manufacturing Co., Fort Wayne, Ind., a corporation of Indiana. The combination of an upright pump-barrel provided with a bore of uniform size from end to end and having in its upper portion an annular recess around the bore thereof and a discharge passage leading from said recess, a cylindrical liner fitting in the bore of said barrel and extending above said recess so as to cover the latter and having one or more ports or apertures formed therein to pass the water therethrough, an upwardly discharging intake-valve closing the lower end of said barrel a piston reciprocating coaxially in said barrel and smaller than the bore of said liner and carrying a hollow head having the same diameter as the bore of said liner, an upwardly discharging valve mounted in said head, a stuffing-box closing the upper end of said barrel, and a cup-shaped vessel into which the lower end of said barrel depends; said vessel being connected in an air-tight manner to said barrel and having a water intake passageway at its lower end and an air-aperture at its upper end, said air-aperture being provided with an air-tight closure.

1,128,097. Shower-Bath Body. Frederick Bockelman, New York, N. Y. The herein described shower bath comprising a cross bar having a hollow interior and tapering arms, the ends of the cross bar being provided with integral valve seats, a pair of tubular necks in alignment with each other formed integrally with the cross bar and extending in opposite directions therefrom and in communication with the interior of the cross bar at the center thereof, a valve seat formed integrally with the outer end of each of said necks, and a securing device comprising a screw threaded stud formed integrally with the rear portion of said cross bar at the center thereof.



1,128,243. Sanitary Water-Closet Bowl. John Lincoln Gish, South Bend, Ind. In a water closet bowl operated by fluid passing through the bowl, the combination of a bowl provided with a flushing rim, inlet and outlet openings, the inlet opening discharging tangentially, a standard adapted to support said bowl, a base adapted to receive said standard, a closed channel-way in the said standard adapted to connect the outlet opening from the said bowl to a connecting pipe, and channel-way provided with an inlet opening.

1,127,970. Soldering Tool. Nathan I. Dryfoos, Cleveland, Ohio. A soldering tool, comprising a head provided with a chamber having an outlet; a tube secured in said head and extending into said chamber; a second tube secured to said head and communicating with the chamber solely through the first tube, the second tube having a lateral opening outside of the head; and a valve controlling said outlet.

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No profit-killing alterations to make, no "fall downs" in service, no kicks from clients, no responsibility to worry you. When installed according to our plans and specifications, we absolutely guarantee the satisfactory working of

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An open system, without pressure in pipes or radiators. No noise; no leaks; no breaks.

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WANTED—SALES MANAGER, A CANAdian farming implement manufacturing corporation has an opening for experienced sales manager (preferably with experience in above line), to take full charge of sales department; attractive salary and commission contract guaranteed to right party; $2,500 cash investment and A1 references required. This is a high grade proposition for a high grade man. Investment fully secured. Correspondence treated strictly confidential. Address 2120, care "Domestic Engineering." 2-6; 13; 20

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WANTED—TREASURER. LARGE MANufacturing corporation, established 1850, location Canada, has a vacancy for a highly efficient business man as secretary and treasurer; party must be able to invest at least $5,000 cash and give best of references as to ability and character; contract with good salary guaranteed to right party; investment absolutely secured; answer in full or no attention paid. Address 2122, care "Domestic Engineering." 2-6; 13; 20

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TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., February 13, 1915.—Sealed proposals will be received in this office until 3 p. m. March 13, 1915, and then opened, for extension and remodeling of plumbing, etc., in the United States post office and courthouse at Auburn, N. Y., in accordance with drawings and specifications, copies of which may be obtained at this office, or at the office of the custodian, Auburn, N. Y., in the discretion of the Supervising Architect. O. Wenderoth, Supervising Architect. 2-20; 27

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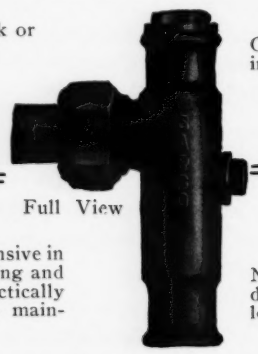
Only one moving part.



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Least expensive in the beginning and costs practically nothing to maintain.

No place for dirt or scale to lodge.

350,000 Sarco Vacuum Valves sold in Five Years.

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The Lampoco Reverse Trap Combination

embodies certain new and scientific principles not found in other closets.

The Reverse Trap Bowl

operates positively and perfectly, taking out from one to thirty sheets of toilet paper with each flushing.

A most practical closet made up in latest designs. Pure white vitreous china tanks and bowls perfectly matched, and fitted with highest grade trimmings obtainable.

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Decidedly the best operating closet on the market.

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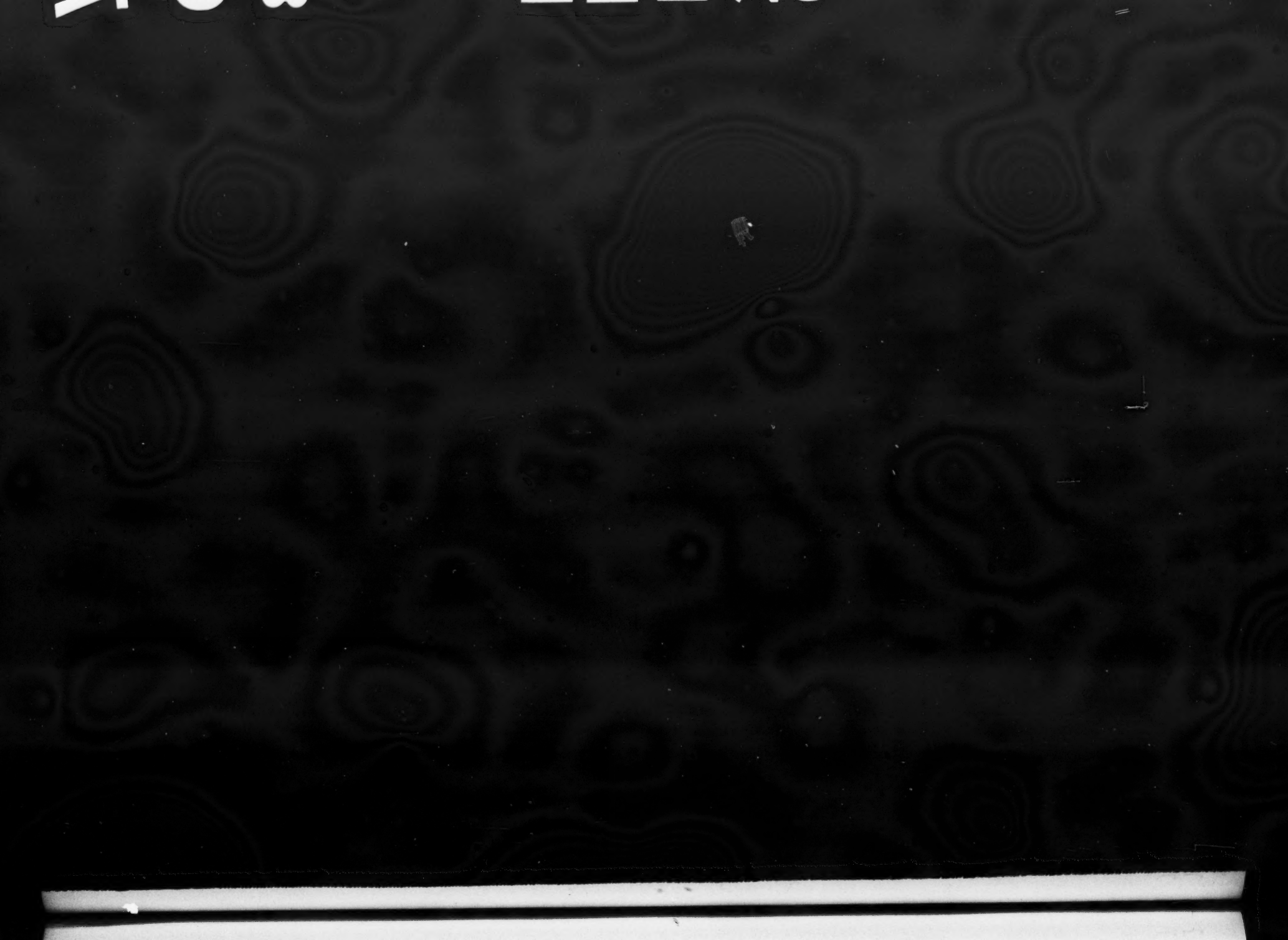
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